DECEMBER 1, 1954

MODERN MEDICINE

The Journal of Diagnosis and Treatment

Nutrition in Heart Disease and Geriatrics
by Dr. Fredrick J. Stare
Table of contents page 7

in hypertension

Nitranitol with Rauwolfia

tandem action for safe, gradual, prolonged relief

Nitranitol for prompt relief of distressing symptoms... slower acting Rauwolfia for prolonged hypotensive and quieting action--no lag in symptom relief. The combination means normal life sooner for your essential hypertensives... no jolting of the vasomotor reflexes... side effects are uncommon.

write: **Nitranitol R.S.** (RAUWOLFIA SERPENTINA)

for a more normal life sooner for your hypertensive patient

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Nitranitol

SIX DOSAGE FORMS

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for direct vasodilation plus the added central hypotensive and calming actions of Rauwolfia serpentina
Mannitol hexanitrate . 32 mg.
Rauwolfia serpentina (alseroxylon fraction) . 0.5 mg.

Nitranitol
for safe, gradual, prolonged vasodilation
Mannitol hexanitrate . 32 mg.

Nitranitol with Phenobarbital
for the nervous hypertensive
Mannitol hexanitrate . 32 mg.
Phenobarbital . . . . . 16 mg.

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for protection in capillary fragility
with Rutin . . . . . 20 mg.

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in refractory cases
with alkaverrin . . . . . 1 mg.
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References: 1. Antibiotics & Chemotherapy 2:55, 1952. 2. Scientific Exhibit, Norristown State Hospital. Data to be published. 3. A.M.A. Exhibit, June 1951. 4. Am. J. Physiol. 166:639 (Sept.) 1953.

MODERN CONTENTS

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MEDICINE
for December 1, 1954

Walter C. Alvarez

Editor-in-Chief

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THE MAN ON THE COVER is Dr. Fredrick J. Stare of Boston, Professor and Head of the Department of Nutrition at the Harvard University School of Public Health and associate in medicine at Peter Bent Brigham Hospital. Dr. Stare is consultant in nutrition to the Children's Bureau, American National Red Cross, U. S. Public Health Service, and Surgeon General of the Army. He is a member of the American Chemical Society, American Institute of Nutrition, and American Society for Clinical Investigation. Since 1942, he has been editor of *Nutrition Reviews*. Among his frequent contributions to medical literature is the Special Article on page 79, "Nutrition in Heart Disease and Geriatrics."

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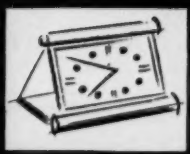

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Purgative: — 4 teaspoonfuls or more before breakfast.

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Administer in one half glass of water, followed by a second glass.

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in the "squeeze bottle" disposable unit

MODERN MEDICINE

Therapeutic Index

for December 1, 1954

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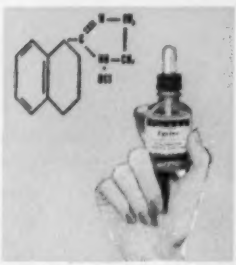

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1. Parish, F. A.: M. Times; in press. 2. Menger, H. C.: New York State J. Med.; in press.

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MODERN MEDICINE
THE JOURNAL OF DIAGNOSIS AND TREATMENT

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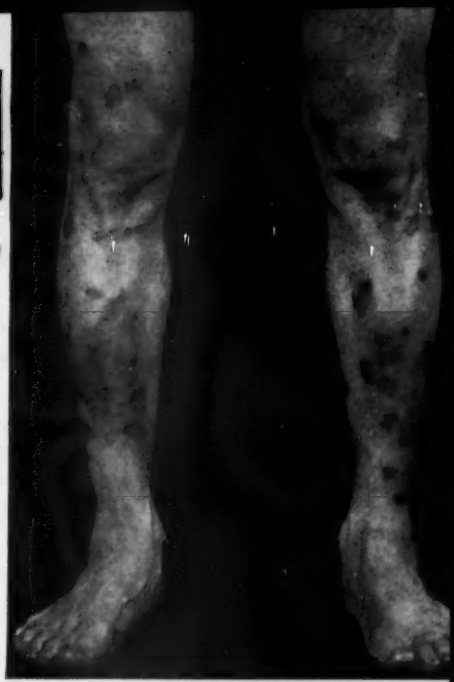

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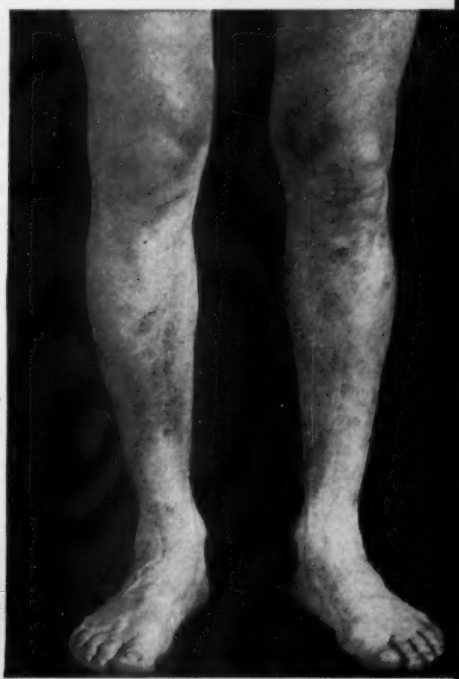

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MODERN MEDICINE

THE JOURNAL OF DIAGNOSIS AND TREATMENT

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LETTER FROM THE EDITORS

Dear Reader:

Eternal vigilance is the price of more things than liberty. It is something that must be practiced by every editor. No matter how insignificant or obscure a typographical error may be, several hawk-eyed readers will find it. And having found it, they write severe letters taking the editor to task. Often these readers have 10-year-old daughters who know much more than the editor and would never make such a mistake.

We keep a little book made up of such letters and read it over from time to time. The rereading keeps us humble and reminds us that we must be more careful.

But we do not rely entirely upon our readers to call the errors to our attention. After each publication day, the editors meet with the editorial committee to criticize the current issue. The notes of this session are kept close at hand so that the particular faults noted, at least, can be avoided.

An elaborate system of checking and proofreading has been evolved to keep errors out of print. Vigilance can never be reduced to a routine, but the systematic checking, routinely done, is a great aid and support to the vigilance against error that is instilled into each member of the staff.

All this effort is taken to produce a better journal for you. Accuracy in medical reporting is the *sine qua non*. You can be sure that *Modern Medicine* will constantly strive for absolute accuracy. That book of letters, however, reminds us that we are only human. Thank goodness it is no fatter than it is.

The Editors

Another dramatic use of 'Thorazine'

THORAZINE*

to stop intractable hiccups

'Thorazine' stopped hiccups (often after the first dose) in 56 out of 62 patients in seven different studies.

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'Thorazine' stopped hiccups in 8 out of 10 patients. In 6 patients, "the hiccups were arrested within 20 minutes" after the first dose of 'Thorazine', in 2 other patients after the second dose. "Most of the commonly available remedies for hiccups had been tried before ['Thorazine'] was administered to these patients."
(Moyer et al.: Am. J. M. Sc. *228*:174, Aug., 1954.)

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(Stewart and Redecker: California Med. *81*:203, Sept., 1954.)

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Clistin Expectorant is non-narcotic . . . compatible,

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The combination of expectorants gives an additive effect,

demulcent base soothes

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Each 30 cc. (1 fl. oz.) contains:

Clistin Maleate (*Carbinoxamine Maleate, McNeil*)	12 mg.
Ammonium Chloride	0.8 Gm. (12 gr.)
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Clistin Expectorant's appealing fruity flavor

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the mouth or upset the stomach

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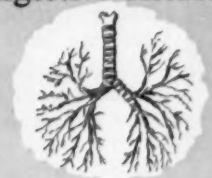

For coughs
that "hang on"
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Correspondence

Communications from the readers of MODERN MEDICINE *are always welcome. Address communications to The Editors,* MODERN MEDICINE, *84 South 10th St., Minneapolis 3, Minn.*

Contrary to Experience

TO THE EDITORS: I have just read the article on hemangiomas by Drs. Varaztad H. Kazanjian and Aram Roopenian *(Modern Medicine,* Oct. 1, 1954, p. 108) and I find much that is contrary to my experience as a dermatologist. The statement that surgery is generally necessary to destroy hemangiomas is at variance with the experience of most dermatologists. Surgical treatment is the exception rather than the rule in treating these lesions.

Many hemangiomas, especially the flat or capillary type, require no therapy, and there is a continuing discussion between pediatricians and dermatologists whether birthmarks need treatment at all. The capillary type is the easiest to treat and will respond to carbon-dioxide freezing with a minimal cosmetic defect. I find that hemangiomas rarely persist into adult life. Those that do are difficult to eradicate.

I do not agree that surgery is preferred for strawberry marks or that surgery is necessary after radiation. Strawberry marks will usually respond to radiation, injection, or even freezing if not too thick. I think if surgery is necessary, it is in some cases of cavernous hemangiomas.

I believe this article gives the wrong impression that surgery plays

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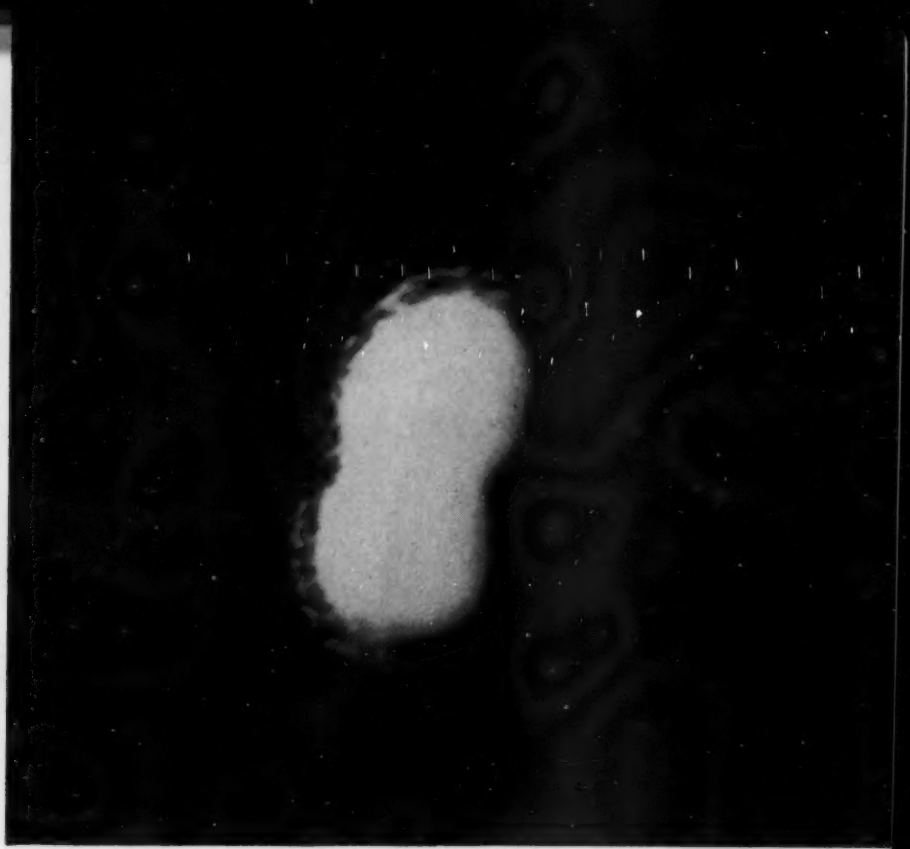

ELECTRON PHOTOMICROGRAPH

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Diplococcus pneumoniae (Streptococcus pneumoniae) is a Gram-positive organism commonly involved in lobar—and bronchopneumonia • chronic bronchitis • mastoiditis sinusitis • otitis media • and meningitis.

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CONVENIENT DOSAGE

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SKOPOLATE is an extremely active parasympatholytic with marked specificity of action. Side effects are infrequent, making possible more effective ambulatory treatment for more patients.

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0.5 mg./cc.
Subcutaneous or intramuscular
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SKOPOLATE
2 mg.
parasympatholytic
EACH TABLET CONTAINS:
scopolamine methyl nitrate 2 mg.

SKOPOLATE
P.A.M.
parasympatholytic
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EACH CAPSULE CONTAINS:
scopolamine methyl nitrate..1 mg.
aluminum hydroxide.....125 mg.
magnesium carbonate...12.5 mg.
sodium dodecyl sulphate.12.5 mg.

SKOPOLATE
D.A.
delayed action
EACH ENTERIC COATED TABLET CONTAINS:
scopolamine methyl nitrate 2 mg.

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a prominent and frequent place in the management of this common neoplasm in children and adults. There are other modalities to be used, and a well-trained dermatologist who employs radiation, carbon dioxide, injection, or surgical technics can decide what treatment is best. Surgery has its place, but in most cases it is unnecessary. It is the rare deep, extensive, deforming hemangioma that needs the care of the plastic surgeon.

STANTON B. MAY, M.D.
Glendale, Calif.

Danger from Glucose

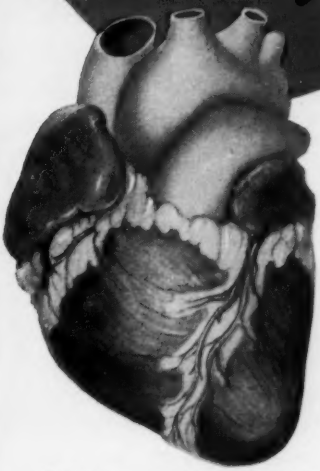
TO THE EDITORS: In general I am in accord with Dr. Curtis J. Lund's article on transfusion therapy in obstetrics *(Modern Medicine,* July 15, 1954, p. 118). However, I disagree with the use of glucose solutions in any concentration before a whole blood transfusion. I believe that recent literature indicates that the danger of a blood transfusion reaction, which may be fatal, is vastly increased after the use of a glucose solution because of hemolysis, even in major type specific blood, and glucose should be condemned because of this danger.

Occasionally, I feel that we forget the value of plain normal saline as [1] a stopgap until we can get whole blood or [2] a means of keeping a vein open in the event that whole blood becomes necessary. I well realize that normal saline solutions are usually contraindicated in toxemic and hypertensive patients, but I believe that this risk is less than a transfusion reaction precipitated by hypertonic glucose.

(Continued on page 28)

IN ANGINA PECTORIS

A Closer Approach to Definitive Therapy



- Reduces nitroglycerin needs
- Reduces severity of attacks
- Reduces incidence of attacks
- Increases exercise tolerance
- Reduces tachycardia
- Reduces anxiety, allays apprehension
- Lowers blood pressure in hypertensives
- Does not lower blood pressure in normotensives
- Produces objective improvement demonstrable by EKG.

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PENTOXYLON, the newest therapy in angina pectoris and status anginosus, combines the tranquilizing and bradycrotic effects of Rauwiloid® and the long-acting coronary vasodilating effect of pentaerythritol tetranitrate (PETN).

The rationale of this new combination is based in part upon the well-known observation that the frequency and severity of anginal attacks are augmented by fear and apprehension. The Rauwiloid effect in PENTOXYLON slows the rapid pulse which accompanies apprehension and pain. The slower heart rate, with its lengthened diastole, permits better coronary filling, more adequate ventricular filling, and wider stroke volume. Thus the work demand on the myocardium is diminished while PETN exerts its prolonged coronary dilating effect. PENTOXYLON offers therapy in angina without xanthines, without stimulation of cardiac rate or work.

Development of full effectiveness of PENTOXYLON requires about two weeks of therapy, though benefits have been observed after 24 hours. Continuing therapy over a period of time with PENTOXYLON—in the usual dosage of 1 tablet q.i.d.—reduces or abolishes nitroglycerin requirements.

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Each tablet contains pentaerythritol tetranitrate (PETN) 10 mg. and Rauwiloid® 1 mg.

Another Riker *Original*

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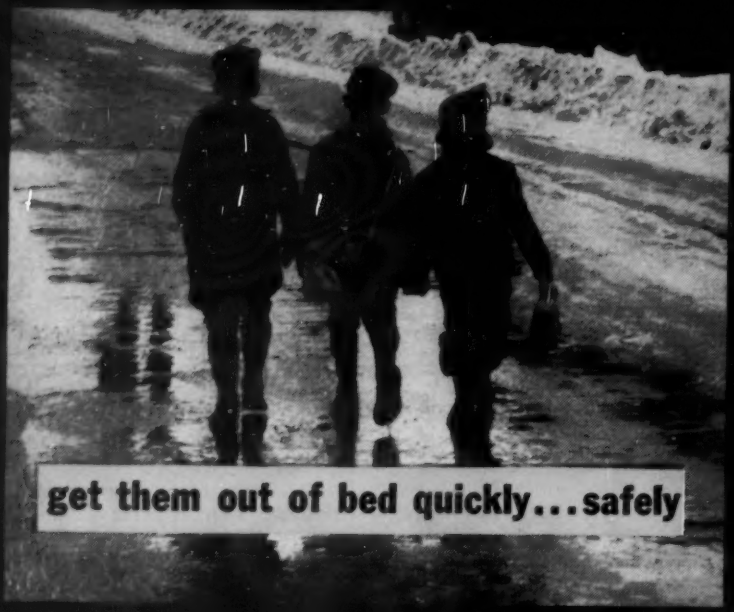

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rapid, maximum recovery assured... because of rapid, prolonged high blood and tissue levels of triple sulfa mixtures.

worry-free therapy... safer, because of high urine solubility that makes risk of crystalluria virtually negligible. As specific as antibiotics in many infections, but avoids certain of their complications. Danger of moniliasis, gastric upsets, bacterial resistance, sensitivity, blood dyscrasia, etc. reduced to a minimum.

the candy-like flavor of Tri-Sulfanyl Syrup appeals to infants, children, women, all patients.

economical... costs far less than broad spectrum antibiotics . . . more effective than single sulfas.

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Sulfadiazine	0.162 Gm.
Sulfamerazine	0.162 Gm.
Sulfathiazole	0.162 Gm.
Sodium Citrate*	0.375 Gm.

*not contained in Tri-Sulfanyl Tablets.

Tri-Sulfanyl Syrup: 4 oz., 16 oz., and gallon
Tri-Sulfanyl Tablets: 100 and 500

SAMPLES and new literature on request.

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division of U. S. Vitamin Corporation
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I must admit that I have used glucose myself but became a "Christian" after a near fatal reaction which was proved to be caused by 5% glucose running at the time the whole blood was started.

J. EDMUND DEMING, M.D.

Tacoma

¶ We asked Dr. Lund to comment on Dr. Deming's suggestion. His letter follows.—Ed.

► TO THE EDITORS: I appreciate Dr. Deming's comments concerning the use of glucose solutions intravenously before transfusions of whole blood. I am completely unaware of the existence of such incompatibility. We have used dextrose solutions exclusively in this manner for the past fifteen years and so far as I know they have not produced untoward reactions. We have avoided stocking saline in the delivery room and on obstetric floors because of the dangerous reactions which might follow the administration of such a solution to a patient with preeclampsia or eclampsia during an emergency or through misunderstanding.

If 5% dextrose is capable of producing serious transfusion reactions, I believe that it is most important that the evidence be disseminated. Many obstetric departments have policies similar to ours concerning intravenous saline solutions.

CURTIS J. LUND, M.D.

Rochester, N.Y.

Overlooked Aspect

TO THE EDITORS: I note with approval the symposium on the unpleasant and at times grave side effects from the administration of antibiotics reviewed from the *Bulletin of the New York Academy of Medicine (Modern Medicine,* Oct. 1, 1954, p. 142). I was at this meeting.

One important aspect was overlooked by the speakers, namely, prophylaxis by more circumspection and limitation in the use of these valuable agents by physicians and surgeons. They should be used only when a diagnosis is established and the indications clear.

In New York City, authorization of over-the-counter sale of 16 antibiotics without medical prescription is being urged. Many instances of grave effects have occurred from prolonged self-use of some of these agents. It would seem that federal authority should prohibit such self-medication as strictly as it prohibits the purchase of narcotics, barbiturates, and other dangerous drugs.

PAUL W. ASCHNER, M.D.
Great Neck, N.Y.

Radiation Effects on Progeny

TO THE EDITORS: Dr. Lytt I. Gardner's comments *(Modern Medicine,* Sept. 1, 1954, p. 16) belong, with Prof. H. J. Muller's contention and Dr. Ira I. Kaplan's refutation, in the field of unprovable hypothe-

ses. A law in history states that the farther back in time one goes, the more uncertain becomes proof of the occurrence of a social event. It is mere hearsay. Similarly, no man can categorically predict the occurrence of a biologic event 100 to 200 generations hence on the basis of 1954 fact or analogy.

The effect of radiation on future progeny is a tremendously important ethical matter, but neither the shrill jeremiads of the genetic school nor the alleged irresponsibilities of the Kaplans are based on sufficient direct observation. A bitterly facetious view would be that man is such a hopeless hybrid anyway, and socially such a smart-dope, that any genetic change would *have* to be for the better—even to the extinction of the monster.

In the Greek myth, the wise silenus is asked what is best and second best for man. His reply:

> The best of all for man on earth
> Is to escape the curse of birth,
> But if the Fates that prayer deny,
> The second best is soon to die.

The genetic problem has been ably summarized by Frank Ellis in a symposium on the genetic effects of nonsterilizing doses of penetrating radiation (*Brit. J. Radiol.* 21:1-4, 1948). A sober proposal for future study is outlined, but, again, the answer lies far in the future and may well be different from what anyone predicted.

NICHOLAS G. DEMY, M.D.
Plainfield, N.J.

ses. A law in history states that the farther back in time one goes, the more uncertain becomes proof of the occurrence of a social event. It is mere hearsay. Similarly, no man can categorically predict the occurrence of a biologic event 100 to 200 generations hence on the basis of 1954 fact or analogy.

The effect of radiation on future progeny is a tremendously important ethical matter, but neither the shrill jeremiads of the genetic school nor the alleged irresponsibilities of the Kaplans are based on sufficient direct observation. A bitterly facetious view would be that man is such a hopeless hybrid anyway, and socially such a smart-dope, that any genetic change would *have* to be for the better—even to the extinction of the monster.

In the Greek myth, the wise silenus is asked what is best and second best for man. His reply:

The best of all for man on earth
Is to escape the curse of birth,
But if the Fates that prayer deny,
The second best is soon to die.

The genetic problem has been ably summarized by Frank Ellis in a symposium on the genetic effects of nonsterilizing doses of penetrating radiation (*Brit. J. Radiol.* 21:1-4, 1948). A sober proposal for future study is outlined, but, again, the answer lies far in the future and may well be different from what anyone predicted.

NICHOLAS G. DEMY, M.D.
Plainfield, N.J.

Forensic Medicine

ARTHUR L. H. STREET, LL.B.

Prepared especially for Modern Medicine

PROBLEM: Ohio statutes provide that if a person examines or diagnoses for a fee, he should be regarded as practicing medicine, for license requirement purposes. In a prosecution for unlicensed practice, was it necessary to prove that doctor's charges had been paid?

COURT'S ANSWER: No.

The Ohio Court of Appeals, Franklin County, said that it was enough to show that defendant had rendered monthly statements for his services (120 N.E. 2d 469).

PROBLEM: A doctor drafted into the Army was ordered released on habeas corpus unless he was commissioned as an officer. He was not commissioned because he refused to sign a loyalty certificate concerning previous subversive associations. He invoked the constitutional guaranty against self-incrimination. Was he entitled to an honorable discharge?

COURT'S ANSWER: Yes.

The decision of the United States District Court, California, Northern District, was influenced by the fact that evidence did not show that the doctor had engaged in subversive activities. His Army service record was excellent.

The court rejected an argument that the doctor's invocation of the Fifth Amendment amounted to a confession of guilt of subversive activities (121 Fed. Supp. 726).

PROBLEM: Members of a family covered by hospitalization were injured in an automobile accident and received hospitalization worth more than $2,000 under the contract. The contract holder also received $18,000 from the persons causing the accident. Since the latter sum included payment for the hospital expense, was the insurer entitled to reimbursement?

COURT'S ANSWER: No.

The Michigan Supreme Court noted that the contract did not state that the insurer was exempt from liability for hospitalization when the contract holder received settlement of a personal injury claim covering hospital expense. The contract specifically enumerated circumstances constituting ineligibility for hospital services, including instances when hospital expense was allowed in workmen's compensation cases.

The court said that the legal question was not to be solved on a theory that a hospitalization contract was in effect an insurance policy. Though Michigan law requires a person negligently causing an accident to reimburse an automobile liability insurer for loss paid insured, a hospital service corporation is not entitled to similar payment (63 N.W. 2d 638).


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*Hermann, I. F. and Smith, R. J.: Journal-Lancet 71:271, 1951.

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*Barden, F. W., Hill, P. S., Mahaney, W. F. and Cuneo, K. J.: J. Maine M.A. 45:11, 1954.

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PROBLEM: A 79-year-old woman left a $16,000 estate. Her doctor who had kept an itemized account of medical services filed a claim for $1,642. Later he sued to establish ownership of her property on the ground that she had orally agreed to will it to him in exchange for his promise to act as her physician for life and to render other services. Some of the other patients of the doctor testified that decedent had told them she had agreed to leave the doctor all of her property. Was he entitled to a court order awarding him the property?

COURT'S ANSWER: No.

The Michigan Supreme Court said because of the confidential relationship existing between physician and patient—especially when the patient is old and debilitated—the doctor must present clear and strong proof of the agreement. He must also show that no undue advantage was taken to influence the compact. The court stressed that the doctor's account books indicated an intent to charge for specific services (65 N.W. 2d 852).

PROBLEM: A railroad worker was severely bruised and sustained rib fractures and partial paralysis of an arm. In his suit for damages, was the doctor who treated the injuries properly permitted to state an opinion that tuberculosis discovered a year after the accident was caused by it?

COURT'S ANSWER: Yes.

So decided the Wisconsin Supreme Court (142 N.W. 505).

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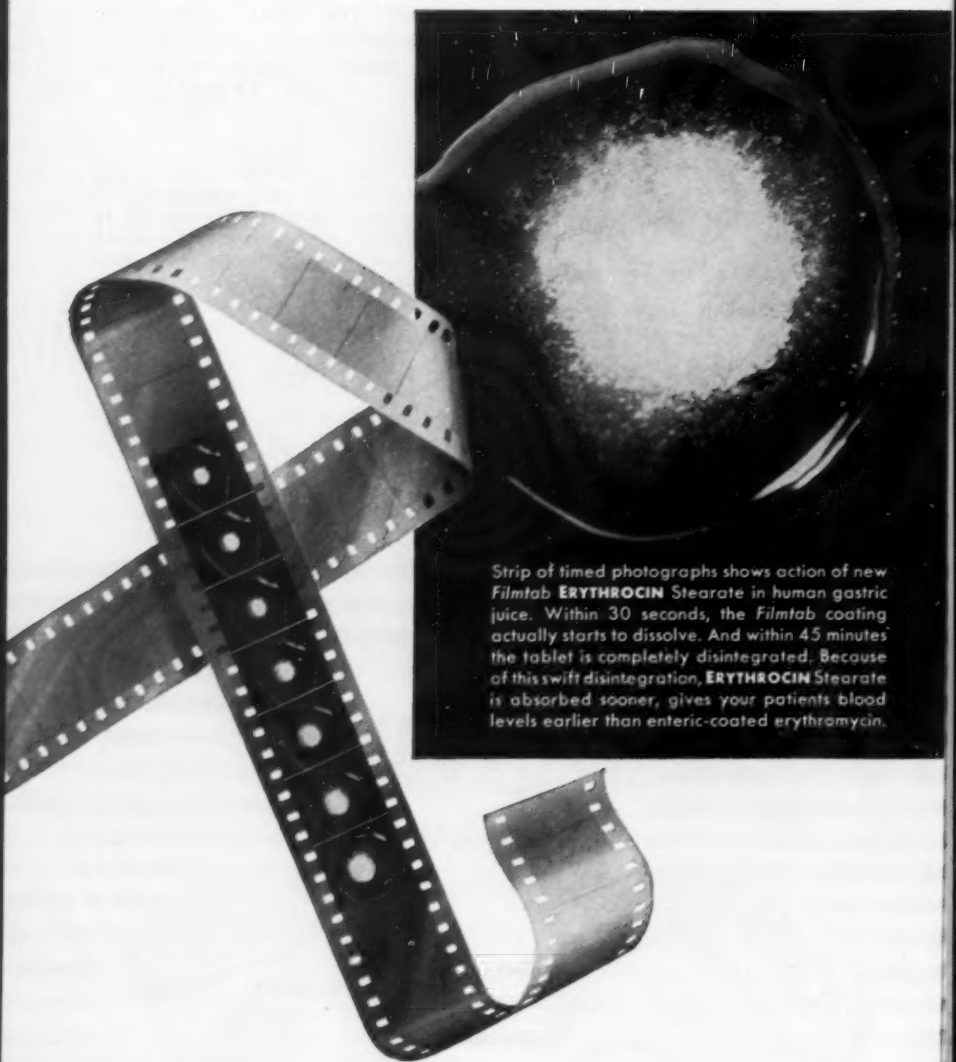

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PROBLEMS: [1] Can a change in climate constitute medical treatment within the meaning of a workmen's compensation law requirement that an employer pay medical expenses resulting from disability in the course of employment? [2] If so, is an employee entitled to reimbursement for expenses he would have incurred at home under normal living conditions?

COURT'S ANSWERS: [1] Yes. [2] No.

The New York Supreme Court, Appellate Division, Third Department, said that whether a medically advised change of climate constitutes treatment must be determined by the circumstances of each case. Only living expenses that are in excess of the amount that would have been incurred at home should be allowed as a claim against the employer (131 N.Y. Supp. 2d 575).

PROBLEM: A practitioner in Connecticut treated a patient's sprained wrist by diathermy. The doctor applied rubber cuffs of the machine to the patient's wrists without protecting them with padding, turned on the current, and left the room. The patient felt a burning sensation fifteen minutes later and called for the doctor, but the physician didn't come until fifteen minutes later. The patient had a severe burn with permanent results. In the suit for malpractice a jury decided against the patient. Was he entitled to a new trial because the trial judge told the jury that the doctor was not liable if he had utilized the skill and care ordinarily used by physicians in the same neighborhood in like cases?

COURT'S ANSWER: No.

The Connecticut Supreme Court of Errors said that a country general practitioner should not be expected to use the skill of specialists in large cities (106 Atl. 2d 466).

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Clinicians[1,2] prove Bentyl is long on effective relief... short on unwanted side effects including blurred vision and dry mouth.

1. Doherty and Brenner: Gen. Med. J. 60:1139, 1960.
2. Lorber and Shay: Fed. Proc. 15:90, 1956.

Complete Bentyl bibliography on request.

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PROBLEM: Does a policy protecting a doctor against claims for injury arising out of the practice of his profession obligate insurer when a patient is injured while preparing for treatment?

COURT'S ANSWER: Yes.

The patient was injured when she fell from a chair that was unsafe. The Ohio Supreme Court rejected the insurer's claim that the policy was limited to injuries resulting from malpractice or negligent treatment. The policy was intended to cover injuries resulting during the physician-patient relationship, which was established when the patient, obeying the doctor's instructions, prepared for the services of the physician (156 Ohio St. 578, 103 N.E. 2d 817, 35 A.L.R. 2d 448).

¶ The decision does not necessarily mean that the policy would have applied if the patient had been injured by a fall as she entered the office.—A.L.H.S.

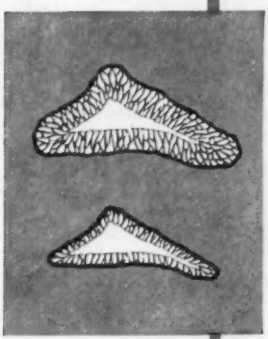
PROBLEM: A group policy insured 2 doctors against damage claims resulting from malpractice. Did the insurance cover liability for injury during esophagoscopic examination when the patient had not consented to the procedure?

COURT'S ANSWER: Yes.

The U. S. District Court, Western District of Louisiana, said that malpractice includes operating without consent.

Q. **Is there a difference between ACTH and THE CORTICOSTEROIDS, cortisone (compound E) and hydrocortisone (compound F)?**

A. **Yes, There *Is* a Difference— and it is clinically significant.**



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This suit was brought by the patient against the insurer. The court allowed an award of $64,116.01. The doctors were insured under separate certificates issued under a group policy, each certificate limiting liability to $50,000. The court decided that the insurer was liable under each certificate for one-half the amount of the judgment (122 Fed. Supp. 1).

PROBLEM: A workmen's compensation board allowed an award on the ground that the employee's death was due to an occupational accident, although the attending physician, an operating surgeon, and a medical examiner did not think that the accident caused or contributed to the death. Was the award sustainable by the testimony of a fourth expert who had never seen the employee and who expressed an opinion based on facts not within the physician's knowledge?

COURT'S ANSWER: No.

The New York Supreme Court, Appellate Division, set the award aside (132 N.Y. Supp. 2d 126).

PROBLEM: An accident victim was taken to a city hospital. The attending physician told her that roentgenograms showed no fracture. Next day a roentgenologist detected a fracture on the dry film, and the change of diagnosis was noted upon the hospital record. The hospital did not notify the patient as to the revised diagnosis for two weeks. Was the omission an administrative act, as distinguished from a medical act, rendering the city liable for damages, despite operation of the hospital as a charity?

COURT'S ANSWER: Yes.

So decided the New York City Court, Bronx County (132 N.Y. Supp. 2d 357).

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PROBLEM: Is an unlicensed physician disqualified from testifying as a medical expert?

COURT'S ANSWER: No.

The New York Court of Appeals, however, warned that medical testimony from someone not licensed to practice should be received with great caution (159 N.Y. 400, 52 N.W. 623).

The Michigan Supreme Court observed that an unlicensed physician might be better qualified to testify on a particular point than another doctor holding a license and that use of the best knowledge available might be denied if rigid qualifications were established for witnesses (293 Mich. 15, 291 N.W. 205).

PROBLEM: A university infirmary nurse was insured under a health and accident policy which provided for sickness benefits if insured was confined, continuously disabled, and attended weekly by a doctor. During summer vacation the nurse had a gallbladder operation performed. When she left the hospital she kept in contact with her doctor by telephone and visited him at his office. At 3 other times she was away from home but always remained in the car, and she sunbathed outdoors. The nurse returned to work Sept. 1. Was she entitled to insurance benefits?

COURT'S ANSWER: Yes.

The Arizona Supreme Court cited similar decisions of the appellate courts of Colorado, Nebraska, Missouri, Texas, Louisiana, and Arkansas (266 Pac. 2d 1082).

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vomiting-free
comfort in pregnancy

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1. Garrett, T. A.: Personal communication.

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H

Hypnosis

1. Beckman, H. *Treatment in General Practice* (Saunders) 1948. 2. Krantz, J. C. & Carr, C. J.: *The Pharmacologic Principles of Medical Practice* (Williams & Wilkins) 1951.

Sample and literature on request

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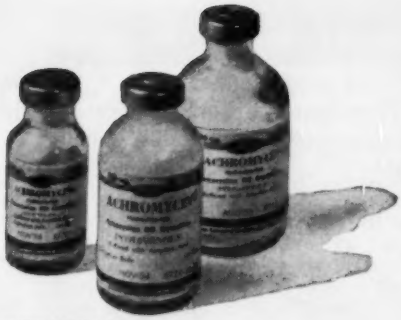

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PROBLEM: A mother was accused of smothering her newly born child. The medical witness for the defense believed that the death was caused by a fulminating respiratory disease and attempted to present some slides taken of infants with respiratory infections who had died suddenly. Did the trial judge properly refuse to permit this evidence concerning other infants to be considered by the jury?

COURT'S ANSWER: Yes.

The Virginia Supreme Court of Appeals said that consideration of deaths of other babies did not help solve the cause of this death, especially since evidence did not show similarity of ages or degree of infection. Exhibits showing like conditions of other patients would only confuse the members of the jury rather than help solve the case (83 S.E. 2d 432).

Appellate courts of Illinois and Missouri reached similar conclusions.

PROBLEM: In Oklahoma, is an ordinance authorizing fluoridation of the water supply unconstitutional because it provides compulsory medical treatment, constitutes municipal practice of medicine, or violates a local statute limiting sale of food containing fluorides?

COURT'S ANSWER: No.

The Oklahoma Supreme Court said that the city no more practices medicine or compounds a drug than a mother who provides a well-balanced diet (273 Pac. 2d 859).

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PROBLEM: A workmen's compensation act provides for an award for death caused solely by silicosis when accompanied by active pulmonary tuberculosis. A workman with silicosis died of streptococcic infection. Was the silicosis a compensable cause of death?

COURT'S ANSWER: No.

The opinion of the Pennsylvania Superior Court was largely based on the distinction made by the state's death certificate law between primary, immediate, and contributory causes of death. The following illustration was cited:

A diabetic dies of traumatic pneumonia after accidental crushing of the chest. Crushing of the chest was the *primary* cause of death and pneumonia the *immediate* cause. Diabetes may have been a contributory, secondary, or complicating cause of death (30 Atl. 2d 370).

PROBLEM: Alleged negligence in treating a broken arm occurred not later than September 26, but the doctor discussed the lesion with the patient October 13. Did the time limit for suing for malpractice run from September 26?

COURT'S ANSWER: Yes.

The Wisconsin Supreme Court said that the time limit does not run from the date when the patient is discharged, if treatment was concluded previously (131 N.W. 361).

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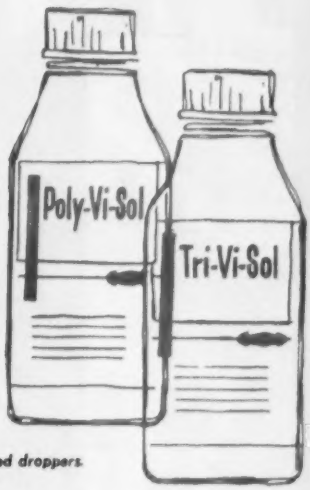

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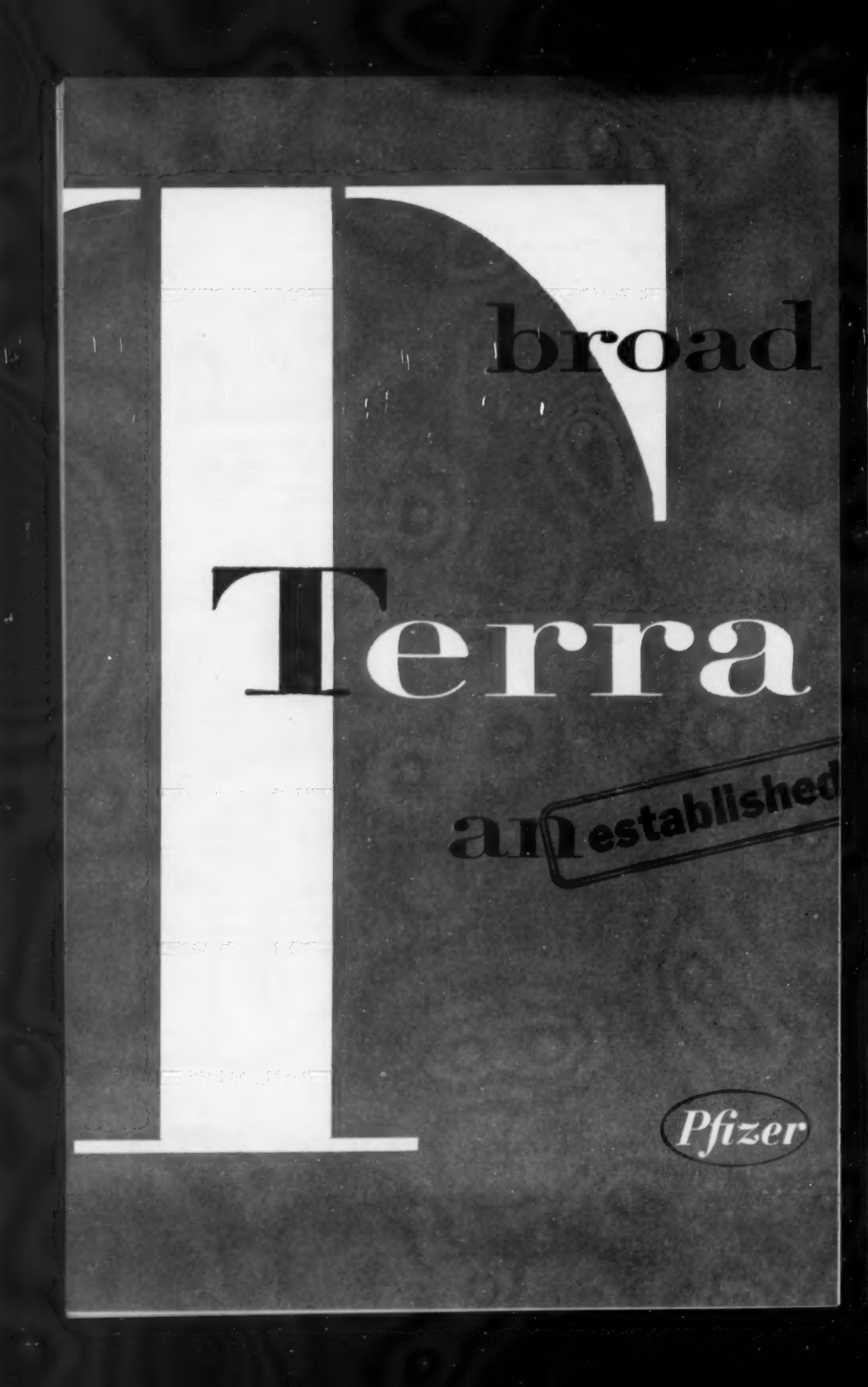
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Questions & Answers

All questions received will be answered by letter directed to the petitioner; questions chosen for publication will appear with the physician's name deleted. Address all inquiries to the Editorial Department, MODERN MEDICINE, *84 South Tenth Street, Minneapolis 3, Minnesota.*

QUESTION: Is an overdose of vitamin B_{12} injurious?

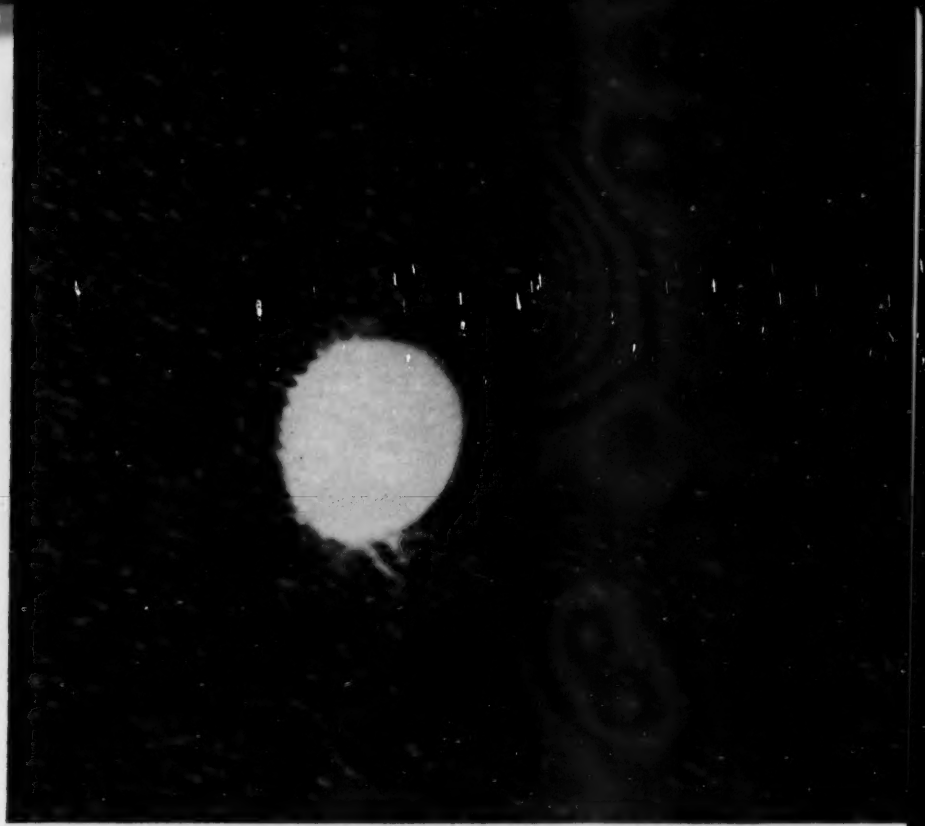
M.D., New York

ANSWER: *By Consultant in Pharmacology.* Apparently, no cases of injury from excessive doses of vitamin B_{12} have been recorded. In cases of myelogenous leukemia, large quantities of the vitamin are contained in the circulation.

QUESTION: What is the recommended treatment for a 20-year-old schizophrenic patient?

M.D., New York

ANSWER: *By Consultant in Psychiatry.* Rational therapy for schizophrenia must be based on more than age and general nosologic diagnosis. If the patient is in fair contact with the environment and is aware and apprehensive over the changes that are occurring in feelings and perception, long-range psychotherapy is advisable. If the patient is withdrawn with extreme sensory and perceptual distortions, some form of convulsive treatment should be employed with psychotherapy. The convulsive agent to be used depends on the particular type of schizophrenia.



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QUESTION: A 40-year-old mother had a mastectomy for carcinoma four or five years ago. The woman now has metastases to the pleura and a metastatic tumor of the ribs. A second patient, 35 years old, recently had the left breast removed because of a very small carcinomatous nodule. Neither patient received postoperative roentgen treatment. Should the patients be castrated by irradiation?

M.D., New York

ANSWER: *By Consultant in Surgery.* The benefits of castration in the management of breast cancer are not predictable. The procedure has sometimes been used routinely for patients under the menopausal age and may be advisable to prevent future pregnancies. Some physicians believe that elimination of ovarian function in recurrent or metastatic cancer causes a regression of the process.

In the first patient, roentgen treatment should be given and irradiation castration performed. In such a desperate case, any potentially beneficial measure should be attempted.

In the second case, management depends upon whether the disease is confined to the mammary gland. If no involvement is found clinically and adequate axillary dissection was performed, castration is not required.

When carcinoma is confined to the breast and mastectomy has been done, the necessity of irradiation is questionable. Such therapy has not increased survival rates, and, when adequately given, may produce irradiation sickness, skin damage, pulmonary fibrosis, lymphedema of the arm, and, at times, neuritis or bone necrosis. These complications do not exclude irradiation therapy if definite benefits are expected from the procedure.

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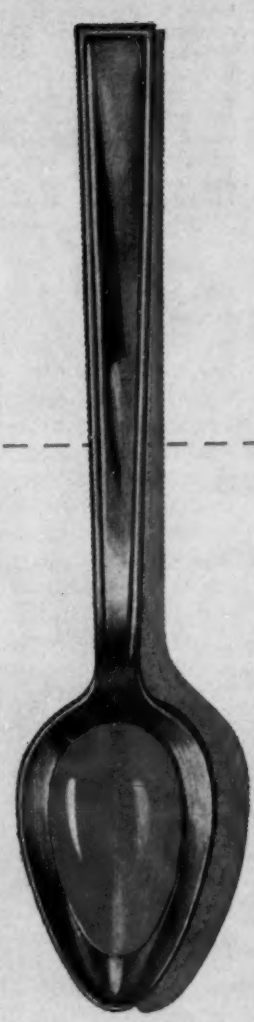

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Washington LETTER

Indians to Receive More Health and Medical Aid

THE U. S. Public Health Service is making plans to take over probably the biggest single responsibility since the service was organized. On orders of Congress, PHS will assume full responsibility for the health of American Indians on July 1, 1955.

Not only is this a large responsibility, but it is an awkward one. Previously, the Indian Bureau in the Department of the Interior has had care of the health of the Indians. There does not seem to be much of a tendency to blame the Indian Bureau for the bad health situation on the reservations, but to blame Congress, which has refused to appropriate enough money to keep the Indians well.

"Believe it or not, dear, I am sitting up with some sick friends."

At any rate, Indians are dying faster and younger than the rest of the population, and some communicable diseases, virtually banished from every other part of the country, still flourish on the reservations. For example, proportionately 3 times more Indians die in the first year of life than do other Americans.

The problem, unofficially at least, is not new to PHS doctors. About 75 physicians working on the reservations are PHS career men assigned to the Indian Bureau, and it has been accepted that all important administrative posts in the Bureau's medical service would be filled by PHS men. Until recently, the physicians have been working under discouraging conditions. They realized that the Indians weren't getting enough medical care, and that what they did get was nothing for a Public Health Service doctor to be proud of. But their budget was low, and they were operating under a department that necessarily was concerned more with dollars and cents and land and legal rights than with medical standards.

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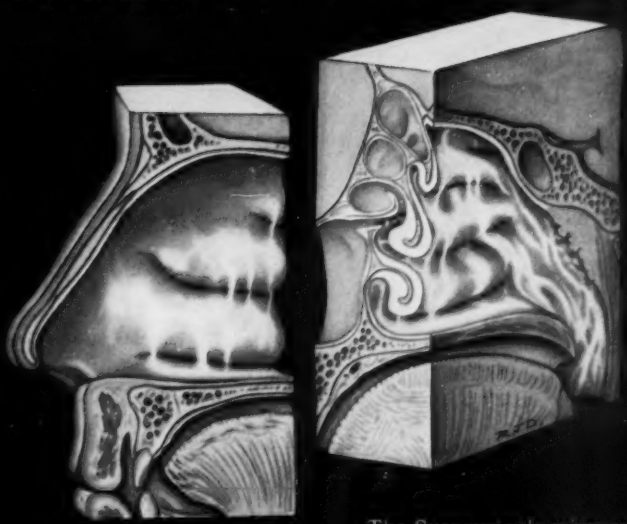

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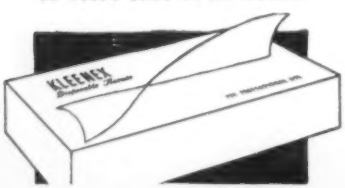

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The Department of Health, Education, and Welfare, under which PHS operates, is accepting the new responsibility reluctantly. After opposing the shift in Congress, PHS is moving into the new task with determination. Dr. Van M. Hoge, an assistant surgeon general, is spending his full time planning for the turnover.

Dr. Hoge emphasizes that most of the civil service physicians working for the Indian Bureau will be retained, as will all other health personnel now on the reservations. He hopes that more PHS physicians will be assigned, but this is a matter for Budget Bureau decision. This year, Congress allowed the Indian Bureau about $22 million for medical care. PHS hopes that this can be increased substantially next year.

Dr. Hoge, his staff, and representatives from the Indian Bureau are working on the new budget. They have presented statistics to the Budget Bureau showing the disgraceful medical and health standards on the reservations as an argument for more money.

The Indians' medical problem is not one that can be settled by supplying more doctors, nurses, hospitals, and medicines. Inadequate, unsanitary housing contributes to the high death and disease rates and some of the tribes don't have the balanced diets that are necessary if good health is to be maintained. In

some locations the Indian Bureau has had only disappointments in long-range efforts at health education, which is also essential if the Indians' disease rate is to be kept down.

PHS will have to act in coordination with the Indian Bureau, which will continue to be in charge of education and general welfare on the reservations.

There are about half a million Indians entitled to health care—400,000 in the continental United States and approximately 100,000 Indians and natives in Alaska. Most of the Indians are concentrated in 11 states—Arizona, California, Minnesota, Montana, New Mexico, New York, North Dakota, Oklahoma, South Dakota, Washington, and Wisconsin, each of which has at least 10,000 Indians. The Indian Bureau now operates 58 hospitals, 15 health centers for outpatient services, and 2 public health units.

While desperately needed, the

"You know the rules, Miss Cacklefud. No gentlemen visitors are permitted in the rooms."

PHS Indian health program will not be permanent. The administration is pledged to bring about the integration of Indians in the general population as rapidly as can be accomplished, while safeguarding the interests of both groups. The idea of integration has been conclusively approved in most states and will continue regardless of which party wins control of the next Congress. The ultimate objective of the health program is to help raise the Indians' standards to the point where they can be more easily accepted into general communities.

DRAFT LOTTERY

By December 15, interns who hope for additional deferment to take residency training will learn whether they have won or lost in another national lottery.

The lottery device was decided on by the Defense Department when it learned that about half the interns wanted deferments, but that no more than a fourth of them could be accommodated. The men concerned are all nonveterans, and therefore have an obligation for two years of service under the regular draft.

Physicians who have a regular draft obligation will have to meet most military requirements after the doctor draft ends next July 1. All the doctors won't be needed next summer at the completion of their internships, and the federal

planners do not want to cause disruption of the country's residency programs.

In September, these interns were asked to inform the Defense Department as to their choice of services, residencies, and of hospitals. If the men agreed to apply for reserve commissions, they were considered for residency deferment if requested.

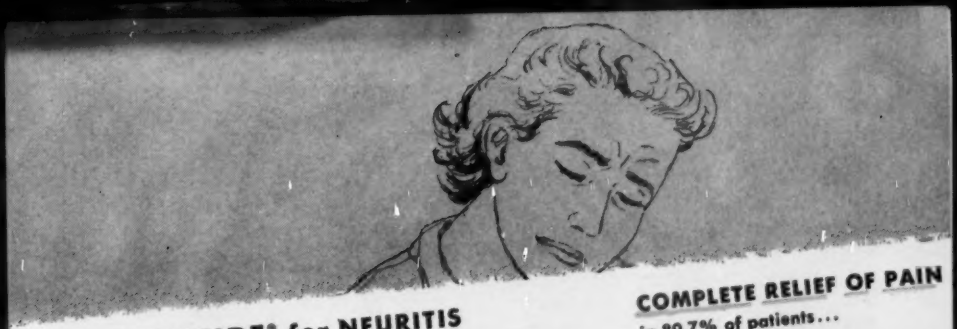
The young men winning deferment will be subject to call at the completion of their residencies. Those losing in the lottery will remain in the reserve, subject to call at any time after their internship. Men who decided not to ask for residency deferments will be allowed to pick the month in which they prefer to go on two-year tours of active duty.

The Defense Department thus hopes to draft into the services all the young physicians it needs next year, while at the same time preserving some in residencies so that the supply of specialists will not be cut off.

Washington Notes

¶ A speech by Undersecretary of the Treasury Marion B. Folsom has kindled new interest in the Jenkins-Keogh plan to allow the self-employed to defer income tax payments on a part of their incomes, provided the money is put into annuity plans. Mr. Folsom, who has

(Continued on page 74)



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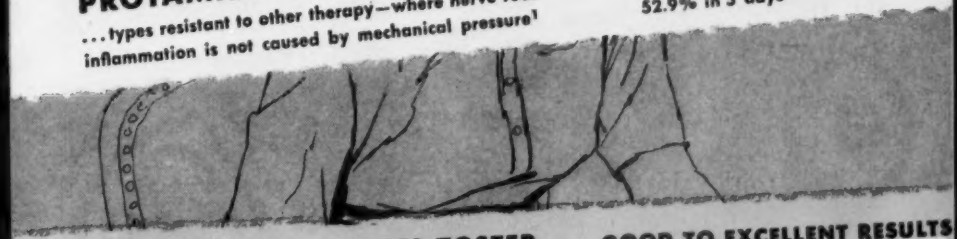

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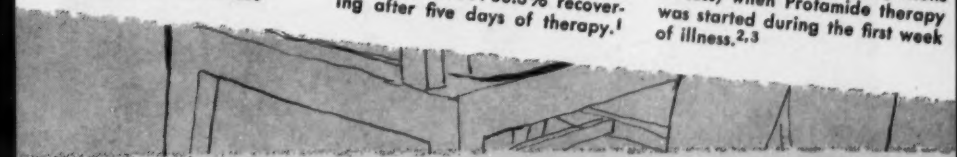

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REFERENCES:
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1. Grayzel, H. G., Helmer, C. B., and Grayzel, R. W.: New York St. J. M. 53:2233, 1953.
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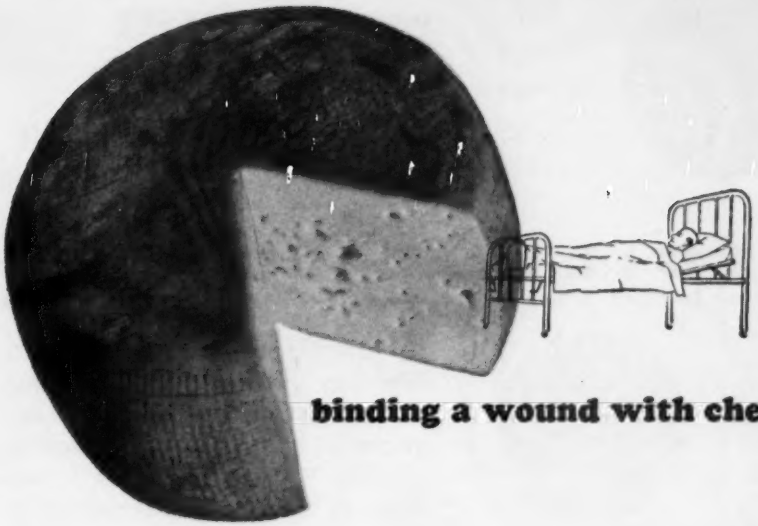
not favored the idea in the past, admitted it was still under consideration by the administration. The Jenkins-Keogh proposal has had the strong support of the medical and dental professions for several years.

¶ Although the federal government is cutting down on total spending for scientific research, the National Science Foundation reports that the United States is putting more money into medical research than in the past. The over-all scientific research total is down 10%, while the medical research category has been increased about 2% for this fiscal year.

¶ The medical director of the Atomic Energy Commission now is cautioning doctors against indiscriminate small transfusions in case of atomic radiation injury. Except in a position of utmost urgency, Dr. John Bugher recommends a conservative approach, because repeated small transfusions from different donors may create more complications than the original exposure, due to such factors as incompatibility and danger from infectious hepatitis.

¶ The Citizens Committee for the World Health Organization is promoting a letter writing campaign to Washington to get the ceiling raised on the American contributions to WHO. The legal ceiling now is one-third of the organization's total budget.



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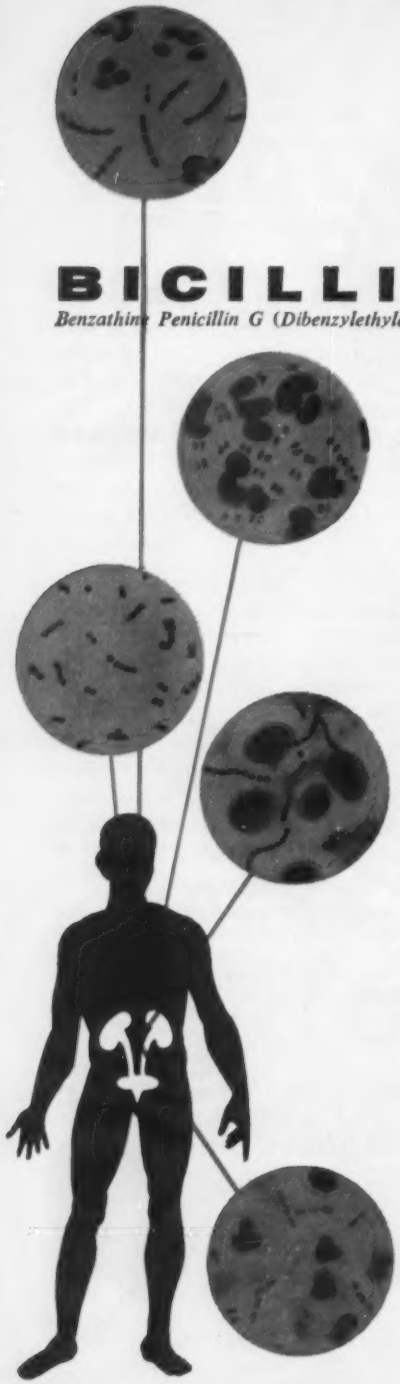

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MODERN MEDICINE
THE JOURNAL OF DIAGNOSIS AND TREATMENT

THE EDITOR'S PAGE

by WALTER C. ALVAREZ, *Editor-in-Chief*

Small Strokes Possibly Due to Spasm

The brief duration of some small strokes has led many men to assume that the cause is a transient spasm of a blood vessel, but as Dr. R. D. Adams has pointed out (*J. Neuropath. & Exper. Neurol.* 13:1-13, 1954), there are objections to this theory. The impression gained by physiologists is that vasomotor nerves cannot produce much spasm in the intracranial arteries.

One of the best arguments against the idea of spasm was given by Osler, who clearly pointed out years ago that, even when the little stroke causes aphasia or paralysis lasting only minutes or hours, some permanent damage is likely. For instance, a physician of 70 who had had three transient aphasias, supposed each time to be due to spasm, was left with permanent weakness of his legs, so bad that never since has he been able to walk except with great effort.

The next question is, if hemiplegia and aphasia disappeared within a few hours what happened? Dr. Adams suggests that collateral circulation may have been established through capillaries running around the area of the brain that was destroyed. Collateral circulation may have developed through meningeal arterial loops; blood may have been redirected through the circle of Willis; or arterial pressure may have been elevated together with local or general vasodilation. In addition, there may have been some rerouting of stimuli.

There may also be some edema associated with small thrombi which may absorb quickly. In favor of the idea of edema is the recent report by Dr. Henry I. Russek and associates that the giving of cortisone right after a stroke apparently brings quick re-

covery. More impressive was the observation in two cases that when cortisone was stopped the paralysis returned, and when the drug was given again the paralysis again partially cleared.

Actually, more careful studies on the brains of persons who have died after several little strokes are needed. I remember one patient whose little strokes were so transient that I considered they might have been due to spasm. When she died, autopsy showed not only dozens but hundreds of little thromboses scattered all through her brain. The impression was that all of the woman's attacks had been due to the thromboses, the cumulative effects of which killed her in the course of ten years.

Temporary spasms may be associated with little thromboses, but my experience leads me to agree with Dr. James Kernohan, neuropathologist of the Mayo Clinic, and now Dr. Adams, that the vascular spasm theory of production of small strokes is not sound.

Hope for Patients with Diabetic Gangrene

At the AMA meeting in San Francisco I saw an exhibit that cheered me. Drs. Lowrie, Redfern, and Brush of the Henry Ford Hospital showed that with conservative handling and the use of antibiotics many partially gangrenous feet can be saved. They made the point that if one amputates a gangrenous foot or leg, great strain is thrown on the other leg; strain which it may be unable to stand because its arteries are close to the failing point.

The doctors showed that many a diabetic lesion which at first sight seems hopeless will clear up if treated conservatively. The diabetes must be brought under control, a vasodilator should be used, infection should be cleared up quickly, bits of dead tissue must be debrided, and finally some skin may have to be grafted. The important point is that even if the patient loses many or all of his toes, if he can keep his foot or part of it, he will be much better off than he would be with an artificial limb.

Obviously every physician who is taking care of diabetics should spend some time impressing on them the great need for avoiding any break in the skin of the legs. Some diabetics get into trouble by doing as simple a thing as yanking off adhesive tape. If this action takes some skin with it, the injury may become gangrenous.

Special Article

Nutrition in Heart Disease and Geriatrics

FREDRICK J. STARE, M.D.*
Harvard University, Boston

Prepared for Modern Medicine

As physicians become more aware of its potentialities, nutrition is becoming of increasing importance in modern medicine. This is true not only as part of the therapy of many common medical conditions but also in the concepts of preventive medicine and public health.

Physicians and health workers who still think of faulty nutrition in terms of scurvy and the other classic nutritional deficiencies or in terms of pure food, the avoidance of contamination, and the other usual concepts of food in relation to public health are thinking of problems of a generation ago. Modern nutrition is concerned with the value, function, and source of the ingredients in food known as nutrients.

Nutrition has acquired several different meanings depending upon whether the discussion refers to [1] diagnosis and specific treatment or [2] patient management. Now that problems of infection are more readily controlled, the importance of supportive care is receiving wide recognition; however, the principles guiding such treatment are still problems of current research.

The interests of nutrition in the patient extend beyond considerations of supportive care. In the field of preventive medicine, for example, research activities are constantly directed toward methods for preventing atherosclerosis, obesity, metabolic disorders, and the many causes of the discomforts of old age. Among the important aspects of nutrition is its relation to heart disease and geriatrics.

HEART DISEASE

Cardiac conditions can be divided into 3 main categories: [1] congenital; [2] infectious; and [3] metabolic, a term not usually used in describing heart disease—except with hyperthyroidism—but which may include atherosclerotic heart disease.

Apparently, the designation "metabolic" for this disease group is more explicit than the usual label of "degenerative," the meaning of which remains equivocal. The use of degenerative is an attempt to describe a disastrous result. Metabolic, on

*Professor and Head of the Department of Nutrition, Harvard School of Public Health, Boston.

the other hand, takes causation into consideration and this is desirable. The term implies that structural changes found in the heart and great vessels are the consequence of disturbed metabolism, whether of only those tissues or of the entire organism. It also implies that the clinical events are consequences of those lesions, and it suggests that clinical events might be prevented or modified if the fundamental nature of the metabolic defect were known. We proceed in our research with the hypothesis that a metabolic defect exists and that it is either produced or significantly influenced by diet.

While formulation of a simple cause of disease is always attractive, it appears far more likely that atherosclerosis, a metabolic form of heart disease, has several diverse causes, of which diet is one. A number of our investigations have led us to recognize the importance of this principle of multiple causality.

To the extent that overweight adds to the work of the heart for a variable period of years, obesity is probably an added hazard in all heart diseases.

A direct relationship may exist between body weight and levels of lipoproteins and cholesterol in the blood. This finding suggests that overweight presents hazards other than additional work for the heart. Differentiation between the hazard of *growing* fat and that of *being* fat may be necessary. Our evidence suggests that the former, that is, periods of positive caloric balance or of weight gain, is more damaging than the mere carrying around of excess fat. This distinguishes so-called active from static obesity. Obviously this matter is of importance to the American public and emphasizes the necessity of research on obesity, a disease that has not been extensively studied from an experimental viewpoint.

A specific study from our laboratory involves the experimental production of atherosclerosis in a species more closely related to man than the usual laboratory animal. We feel that a major accomplishment during the past two years has been the development of a technic for the production of atherosclerosis in the Cebus monkey. This New World primate has been studied in our laboratory for the past six or seven years. In the past couple of years we have been able to produce in a few months, by dietary means, a form of atherosclerosis which appears to be identical with that seen in human beings. Atherosclerosis is produced in the short period of eighteen to twenty weeks in adolescent monkeys fed a diet low in the sulfur amino acids, high in fat, and with added cholesterol. The tissue changes are preceded by an elevation of the serum lipids, both cholesterol and lipoprotein. Neither the lack of sulfur amino acids nor the added cholesterol alone will produce the disease in the length of time we have studied these monkeys. Both conditions must prevail.

Choline deficiency is not involved in these observations since choline must be included in the diet in order to produce these lesions. Both lipemia and vascular disease can be prevented by using a diet with ade-

quate protein or supplementing the diet with methionine, cystine, or cysteine.

Autopsies have been performed on 19 animals with hypercholesterolemia for eighteen or more weeks. About half of the animals had pronounced aortic lesions, the remainder had slight lesions, and only one animal had no aortic involvement either grossly or microscopically. None of 7 control animals showed demonstrable aortic changes.

Vascular lesions occurred predominantly in the ascending aorta but extended from the valves of the left ventricle to the proximal portions of the carotid and femoral arteries. Extensive lesions appeared at the opening of the two main coronary vessels and slight lesions were observed in the coronary arteries. The lipid deposits in the lesions were in part cholesterol derivatives.

This study reaffirms the hypothesis that has guided much of our thinking in recent years; namely, that atherosclerosis is fundamentally a metabolic disease, subject to important dietary influences.

GERIATRICS

The increasing population of old persons has focused attention on the health needs of this group and has led to a branch of medicine commonly called geriatrics or geriatric medicine. The practicing physician is frequently called upon to advise the old patient about his food habits in order to improve his health or to correct some of his complaints. In the light of our present knowledge we believe that a well-balanced diet of milk, meat, fruits, vegetables, and cereals is as important for the individual of 70 years or more as for the child or young adult. Sound nutrition for the elderly patient includes:

- Reduction of calories and, because of the need for fewer calories, encouragement of activity somewhat above the maintenance level. Such activity also stimulates the peripheral circulation, strengthens bones, and improves gastrointestinal activity.
- Smaller proportion of calories contributed by fat and a larger proportion by protein.
- Dietary modifications, if necessitated by poor dentures, low income, inadequate cooking facilities, or poor appetite.

Inadequate funds, lack of knowledge of food values, and isolation constitute a vicious combination which makes an old person a ready prey for food faddists. It is surprising and pathetic to witness how eagerly concoctions hinting at the elixir of youth are sought by the old generation. Even the most restricted budget can be stretched to pay for them. The physician who sees an elderly patient should be aware of these factors.

Moderate activity contributes in many ways to the old person's nutrition just as it does to the young person's. Activity stimulates the circulation, promotes an increased sense of well-being, encourages an interest in food, revives a sluggish appetite, and keeps some excess calories from being stored as fat. Improved muscle tonus, a corollary of activity, aids digestion and

elimination so that eating is a pleasure.

The elderly patient who must reduce presents a unique problem. Because he has often lived with his excess weight a long time, he is not easily convinced that weight loss may alleviate some recent complaints or improve his chances of surviving. When the elderly obese patient has arthritis, his activity is quite likely to be greatly restricted. This lessened activity results in a low caloric expenditure. In order to reduce such a patient, a stringent dietary regimen may be necessary. It is important for the subject's morale that there is a weight loss the first few weeks and continued loss thereafter. Particular attention should be paid to salt intake and sufficient limitation made to prevent the transitory salt and water retention which often occurs the first two weeks and disguises a real loss of adipose tissue.

In formulating a weight reduction program for the aged individual, careful attention must be given to selection of nutrients in order to assure adequate nutrition. For the aged as well as for the young person, a weight reduction diet affords an opportunity for improvement of food habits. However, it must be recognized that the aged individual does not easily change the food practices that he has had for a lifetime.

Since excess protein is not stored in the body, regular daily consumption is necessary. Recent work has emphasized the well-known supplementary value of proteins; this refers to the ability of one protein to improve the utilization of another when eaten at the same time. Thus the body derives greater nutritional benefit from cereal with milk or from rice and peas at the same meal than from these individual foods eaten separately.

The reasons for recommending a high-protein intake in old age are manifold. However, many old persons experience difficulty in increasing consumption of protein foods. Discomfort and refusal are common when a high-protein diet rich in meat, eggs, and milk is ordered for the aged individual. This is true of normal old persons as well as for those with anorexia. For these reasons, an amino acid supplement containing methionine and other essential amino acids may be useful in enabling the aged individual to maintain a positive nitrogen balance. Such a supplement might be in the form of a pill or capsule at each meal.

Animal protein foods and amino acid supplements cannot always be afforded, however. Hence there is a place for cereal products in which the protein is increased both in quantity and quality. This should be possible by a suitable mixture of cereals and perhaps by the addition in small quantity of key amino acids, such as lysine, which is particularly low in the cereal grains. Such a product prepared as a ready-to-eat cereal or bread at a low price would be valuable in the treatment of nutritional problems and in prevention of such deficiencies in the aged.

Hypoproteinemia is a frequent finding with senile pruritus, bed

sores, wounds that do not heal, and with chronic eczematous dermatoses. Successful treatment of these conditions with a high protein intake and the oral administration of amino acids is relatively common. Fatigue, edema, anemia, and lowered resistance of many old people may be related to low protein intake, poor distribution of protein in the day's meals, and impaired protein utilization.

A reduced fat intake with advancing years appears advisable, but sufficient amounts of the essential fatty acids should be supplied as these may contribute to the maintenance of a healthy skin.

The Mentally Retarded Child

JEROME NATT, M.D., ROANOKE, VA., believes that the sooner treatment of the mentally retarded child is started, the better the chances for the child to become self-sufficient. Etiologic factors include prenatal influences, birth injuries, neonatal infections, and unsatisfactory neonatal emotional and environmental situations. A specific cause is rarely found.

Early diagnosis requires time, skill, and patience. The retarded child progresses more slowly than the normal child in all spheres. Infantile qualities such as short interest span, temper tantrums, emotional instability, social inadequacy, poor abstraction ability, difficulty in following directions, poor coordination, hyperactivity of muscles, and speech difficulties are retained. Although physical examination is seldom revealing, defects such as impaired hearing or vision must be considered. Psychometric and psychologic tests should be administered by trained personnel.

Early treatment of the child is begun at home. Training requires slow and careful repetition of the simplest procedures. The child must be loved and gain a sense of family security. Special help is available through community services. Advanced treatment falls in the realm of education.

Education of the parents of a mentally retarded child is important. When the diagnosis is made, the parents' feelings of guilt, shame, fear, resentment, and frustration must be allayed. Psychiatrists, social workers, psychologists, educators, and guidance clinicians cooperate with the physician in helping the parents to train the child. Parents are encouraged to join a parents group.

Treatment on a community level involves education of the public, legislation, and research. The community should provide diagnostic centers, preschool clinics, classes for retarded children, vocational schools, sheltered workshops, guidance centers, counselling services, and recreational facilities.

Mental retardation. GP 9:57-60, 1954.

Acute Dilatation of the Stomach

CHARLES REID EDWARDS, M.D., AND HARRY C. BOWIE, M.D.
University of Maryland, Baltimore

*Severe gastric distention may be a complication of various lesions; treatment should be preventive.**

THE true incidence of acute dilatation of the stomach is difficult to determine, since so many conditions are considered to be etiologic factors and since the entity is frequently not considered of a serious nature.

Gastric distention can be related to cardiac or pulmonary disease or to abdominal or extremity lesions, particularly if trauma or surgery is involved. Even spontaneous mediastinal emphysema may be a cause. Dilatation occurs more frequently in men than in women and oftener in the white race than in Negroes. Elderly patients are most commonly affected.

The condition is initiated by stimulation of the visceral or sensory somatic nerves during surgery or trauma, with transmission of impulses to the vagus center. Inhibition eventually occurs after the initial vagus stimulation, leading to a type of local paralytic ileus.

Symptoms are not specific and may be slight. Many instances are recognized only at autopsy, since dilatation may accompany several fatal diseases. Tentative diagnosis can be made if a postoperative or posttraumatic patient has eructations, hiccups, and heartburn and especially if small amounts of brownish or greenish fluid are vomited. Roentgenograms of the abdomen will usually confirm the diagnosis.

Dilatation is usually slow in onset, and symptoms are slighter and better tolerated than when the process occurs rapidly. Shock frequently accompanies rapid onset.

Over one-half of patients with postoperative acute gastric dilatation have been given general anesthesia during surgery. Apparently, bag-breathing the patient, without the insertion of an endotracheal tube, forces much of the gas into the stomach, especially if the airway is obstructed, and esophageal negative pressure increases.

A nasogastric tube should be inserted into any patient [1] having upper abdominal or thoracic surgery, [2] with trauma or shock, [3] who previously has had obstruction of the airway during anesthesia induction, or [4] in whom acute gastric dilatation is even slightly suspected.

Death by drowning is a definite hazard when the symptoms are severe, and the patient should be immediately placed in a prone Trendelenburg position to prevent aspiration.

*Acute gastric dilatation: a clinical problem. Am. Surgeon 20:959-965, 1954.

Gastric Resection

CLAUDE J. HUNT, M.D.
Kansas City, Mo.

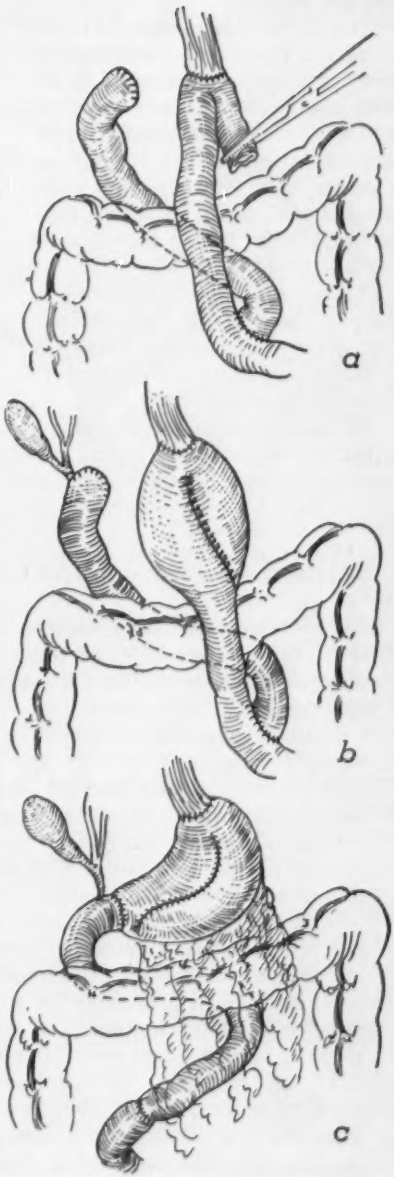
*Surgery should always be performed for gastric ulcer, but total gastrectomy is seldom necessary.**

ABOUT 10% of gastric ulcers are malignant, but the histologic nature of the lesion cannot be determined by response to medication, size of the ulcer on roentgenogram, or the amount of free hydrochloric acid. Therefore, acute gastric ulcer should be resected early unless the lesion is positively proved to be benign.

A radical subtotal procedure, removing all tissue-bearing gland substance and leaving a serviceable food pouch, is generally satisfactory for stomach cancer. Total gastrectomy is not always advisable since postoperative morbidity is high and the five-year survival rate is not greatly increased.

Complete stomach excision is reserved for the linitis plasticus type of carcinoma and for lesions in the upper segment of the stomach when total removal is necessary to destroy all visible disease. If the gastrohepatic omentum or the celiac glands are involved, complete gastrectomy does not effect a cure; the subtotal procedure is used.

Malnutrition, anemia, and reflux esophagitis often occur after total gastrectomy. The complications can be avoided by employing the Roux-



*Cancer of the stomach. South. M. J. 47:883-888, 1954.

Y technic and creating a food pouch with the jejunum.

After the stomach, omentum, and spleen are freed and the duodenal stump is closed, the jejunum is divided about 12 in. below the ligament of Treitz. The distal end of the jejunum is brought up anterior or posterior to the colon and anastomosed side-to-end to the esophagus well back from the severed jejunum tip (Fig. a).

The anastomosis is facilitated by exerting traction on the stomach. The stomach is excised above the cardia before the anterior row of sutures is placed.

The distal end of the jejunum is approximated to the ascending segment and a wide stoma is made in between, forming a food pouch. This structure is supported by sutures to the diaphragm and peritoneum. The proximal jejunum is then anastomosed to the side of the distal jejunum well below the pouch (Fig. b).

The stomach may also be replaced with an isolated loop of jejunum with attached mesentery. The jejunum segment is folded on itself so that the 2 ends are almost together and a full-length stoma is made between the parallel portions, which are sutured side-to-side. The pouch is anastomosed to the esophagus and the end of the jejunum to the duodenum. The jejunum from which the isolated segment was taken is reunited end-to-end (Fig. c).

Solitary Circumscribed Lung Lesions

CAPT. ROBERT C. JONES, M.C., AND COL. EDWARD A. CLEVE, M.C., U.S.A., state that advisability of removing solitary circumscribed lesions of the lung depends upon calcification of the lesion and the age of the patient.

Positive diagnosis is difficult without thoracotomy which has a mortality rate of 1 to 4%. The surgical risk must be considered against the likelihood that the lesion is a manifestation of bronchogenic carcinoma or an unstable inflammatory condition.

Calcified lesions are usually benign and can be left in situ if the patient has no symptoms. The danger of a calcified inflammatory nodule breaking down to reactivate an infection is negligible.

A person under 35 years with a solitary round lung lesion rarely has bronchogenic carcinoma; however, undiagnosed lesions should usually be excised since the majority are foci of inflammatory disease. Excision is preferable for patients over 35 years with solitary, noncalcified lung nodules. The incidence of malignancy of such lesions among patients over 50 years is from 44 to 70%.

Of the reported 714 histologically proved isolated, round pulmonary lesions, about 35% were malignant tumors, 40% were inflammatory, 13% were benign, and 12% were heterogeneous.

Solitary circumscribed lesions of lung. Arch. Int. Med. 93:842-849, 1954.

Treatment of Postphlebitic Sequelae

ALTON OCHSNER, M.D.
Tulane University, New Orleans

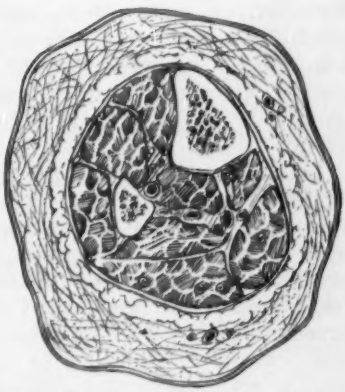
*Almost all sequelae of thrombophlebitis can be prevented if adequate treatment is instituted during the active disease phase.**

THROMBOPHLEBITIS rarely causes death, except when septicemia occurs after liquefaction of a clot, but often produces disabling sequelae. Phlebothrombosis, on the other hand, is potentially fatal, although few signs and symptoms accompany the disease; lesions rarely occur after the acute process subsides.

Edema, the most frequent postphlebitic sequela, often results from persistent vasospasm and can be prevented by administering vasodilators during acute thrombophlebitis. Vasospasm is less evident after than during the active disease phase but can be demonstrated by decreased edema after interruption of the sympathetic impulses. Venous stasis due to incompetent valves and incomplete recanalization of thrombosed vessels associated with severe perivenous cicatrix contribute to edema.

The edema is soft and pits easily. Tenderness of the legs may be generalized or may be along the veins.

The patient should avoid vasoconstrictors. Compression bandages should be applied before arising in the morning and left on until retirement. Frequent walking assists the movement of lymph by muscular pumping action. Standing in a relaxed position or sitting with the knees flexed predisposes to lymphedema. For severe edema, periodic elevation of the legs is necessary and sympathectomy may be beneficial.



Deposition of subcutaneous fibrous tissue

The high-protein content of edematous fluid is an ideal culture medium for streptococci, and recurrent infection is common after thrombophlebitis. Fungous infections of the feet or injury to the skin allows the organisms to enter. Repeated deposition of subcutaneous fibrous tissue attributable to the infections

*Treatment of postphlebitic sequelae. South. M. J. 47:441-447, 1954.

produces elephantiasis (see illustration).

Control of edema, careful foot cleansing, and use of a fungicide such as Desenex generally prevent epidermophytosis, the most common fungous infection involved. Penicillin or sulfonamide agents should be used during active infection. For six to twelve months, 1 gm. of Gantrisin is given three times a day for one week of each month.

Varicosities which result from inflammation of the vein wall and valvular changes may cause venous stasis and dermatitis. Ulceration, especially above the internal malleolus, is painful and persistent. Compression bandages are mandatory, and Gantrisin should also be used since many patients have concomitant streptococcic infection. The patient should not be ambulatory during the acute phase but muscular activity should be encouraged.

After symptoms subside, venous stripping is done and communicating veins are ligated. However, the superficial veins should not be extirpated if ambulatory venous pressure increases when the superficial veins are obliterated with a tourniquet.

For patients with ulceration or pronounced skin fibrosis, excision of the ulcer and marred skin and skin grafting produce excellent results. Preliminary sympathectomy facilitates healing by increasing the blood flow.

Elephantiasis due to repeated streptococcic infections is treated by radical extirpation of all the fibrotic and edematous subcutaneous tissue. All fungous infection must be eliminated before surgery is performed. The operation is done in 2 stages, usually six months apart; tissue down to and including the fascia of half the circumference of the leg is removed each time.

Rotary Lawn Mower Injuries

VINCENT M. IOVINE, M.D., WASHINGTON, D. C., reports that high-speed rotary lawn mowers may cause severe trauma to the legs. The blades easily sever bone or other hard tissue.

The toes or forefoot may be amputated when the machine inadvertently passes over the foot of the operator. This accident usually occurs if the foot of the driver slips down under the mower when descending a slope. Severe bone injury, extensive tissue damage, and neural disruption may occur if a firm imbedded object is struck by the rotating blade. The blade breaks and flies off at a high speed, producing a fragment that is similar to one from an exploding mortar shell.

Treatment should include prompt surgical debridement and reconstruction, proper antibiotic protection, and prophylactic immunization for tetanus.

High-speed rotary lawn mower injuries. GP 10:51, 1954.

Radioactive Gold for Carcinomatosis

EDWARD M. KENT, M.D., CAMPBELL MOSES, M.D., WILLIAM B. FORD, M.D., EUGENE R. KUTZ, M.D., AND ROBERT S. GEORGE, M.D.

University of Pittsburgh and Allegheny General Hospital, Pittsburgh

*Results are favorable for about half the patients with carcinomatous effusions treated with radioactive colloidal gold.**

INTRACTABLE effusion in one or more serous body cavities may complicate as many as 30% of cases of malignant disease. Radioactive isotopes, primarily Au^{198}, can be used to provide symptomatic relief whenever intractable pleural or peritoneal effusion is caused by cancer.

Palliation should not be attempted unless malignant cells are demonstrated in the fluid or the diagnosis is proved by biopsy from the primary lesion or metastasis. Cytologic evidence from sputum or by bronchoscopic aspiration is acceptable with pulmonary cancer.

Most of the fluid from the pleural space is withdrawn by thoracentesis. A Y-connector is attached to the needle, and the radiogold is injected. For the peritoneal cavity, paracentesis is done with a small trocar and cannula. After the peritoneal fluid is taken out, a small polyethylene tube is passed through the cannula; the cannula is withdrawn and the isotope is injected through the tubing. Injection syringes are covered with protecting shields of lead.

An isotope solution containing 100 millicuries of radiogold is diluted to 20 cc. with sterile isotonic sodium chloride solution. A second injection, if necessary, is usually given within three weeks.

The toxic manifestations include brief occurrences of what appear to be radiation sickness and slight hemopoietic suppression. A subcutaneous leakage of Au^{198} may cause cellulitis. If the skin is exposed to radiogold, erythema and pigmentation occur.

Colloidal gold probably becomes fixed on serosal surfaces and causes superficial damage. Properties of radioactive gold suggest that malignant effusions are suppressed by surface action; half-life of the agent is about two and one-half days.

The result is evaluated as excellent if the patient needs no further aspiration of effusion after the initial treatment. The patient is improved if no more than 2 additional taps are required. If fluid formation continues, the outcome is a failure.

Among 112 patients with intrac-

*Radioactive isotopes in management of carcinomatosis of serous body cavities. Arch. Int. Med. 94:334-340, 1954.

table pleural effusions, the primary site of cancer was generally in the lungs or breasts. Postmortem examinations of 39 patients with pulmonary cancer showed that results of therapy with intracavitary radiogold were excellent in 41%; an additional 13% were improved. Therapy of 38 persons with primary breast cancer was evaluated after death; effectiveness of the gold was excellent in 52%, and 16% of patients were improved.

Postmortem studies of 36 patients with carcinomatous ascites revealed that radioactive gold produced excellent results among 45% and improved 17%.

Office Technics for Two Pediatric Disorders

F. MICHAEL SMITH, JR., M.D., AND SARAH MARK BRAUD, M.D., THIBODAUX, LA., describe practical methods of office therapy for two common disorders of infancy: [1] clavicular fracture and [2] umbilical granuloma.

1] For immobilization of clavicular fracture only 3 materials are needed: a large size diaper, 2 large safety pins, and adhesive tape. The diaper is folded in a triangle and, by continuous folding in a 2-in. band, forms an elongated cotton strip. Both ends are turned medially to give the desired length. The ends and the loose center fold of the triangle are secured by adhesive tape. The folded diaper then is applied as a clavicular posterior figure-of-8 dressing.

No padding is necessary. About two weeks' application permits adequate union. The method is not sufficient if fragments are badly displaced.

2] The most common cause of delayed healing of the umbilical stump is a soft, vascular granuloma with seropurulent secretion. A simple method of treatment is as follows: The wound is first cleansed with alcohol. An office assistant provides traction with the fingers at the umbilical margins, causing the base of the lesion to flatten and protrude outward. A long length of No. 40 white cotton sterile ligature is looped around the granuloma and worked as close as possible to the base by means of a hemostat. The suture is tied tightly, and the ends are cut about 2½ in. long and allowed to lie out of the wound.

The granulated flesh is cauterized with a silver nitrate stick and wiped with alcohol. No dressing is needed. The parent is instructed to cleanse the area twice daily with a cotton-tipped applicator. A liquid ointment, 8 gm., that contains 4,000 units of polymyxin B sulfate and 200 units of bacitracin is prescribed. Granuloma will slough off in five to seven days.

Two simple office techniques in pediatric practice. J. Louisiana M. Soc. 106:212-214, 1954.

Arthritis of the Hip in Infants

DONALD W. ROSS, M.D.
Los Angeles

*Serious and permanent disability usually results if suppurative arthritis of the hip in premature infants is not immediately diagnosed and treated.**

ACUTE suppurative arthritis of the hip in the newborn occurs rarely and constitutes a pediatric emergency. Since the process may destroy the cartilaginous components of an infant's hip in just a few hours, delay in treatment usually leads to severe, irreversible joint damage, such as destruction of the acetabulum or of the femoral head and neck, dislocation of the hip, or deformity of the entire ipsilateral pelvis.

Premature infants seem to be especially vulnerable to pyogenic hip infections. Diagnosis is often difficult because the usual systemic reactions to infection may not appear. The commonest offending organism is *Micrococcus pyogenes aureus*, and hip involvement may be secondary to such distant superficial infections as excoriations on the head, pustules on the abdomen, or purulent phimosis.

Differential diagnosis should include cellulitis, superficial abscess, thrombophlebitis, congenital anomalies, trauma, and acute poliomyelitis. Frequently, suppuration within the hip joint is overlooked because of cellulitis of the buttock or groin after an intramuscular injection or femoral venipuncture. Intensive treatment of the involved superficial tissues by such measures as incision, drainage, or local instillation of antibiotics may mask the underlying joint disease.

The lesion probably does not result from direct extension to the joint from a nearby primary infection but is caused by a hematogenous spread from a distant focus.

Physical signs of intraarticular disease are [1] flexion contracture, [2] restriction of abduction, and [3] deepening of the transverse gluteal crease or the existence of an extra skin crease.

Flexion contracture is detected by gently pulling on the infant's ankle to extend the thigh while simultaneously flexing the opposite thigh on the abdomen. Restriction of abduction is determined by attempting to move the knees apart while the hip is flexed to 90°. In normal infants, the thighs can be abducted to the horizontal.

After diagnosis is made, the joint should be promptly aspirated with a large-bore needle. Treatment depends on the result of the aspiration and may include open drainage of the joint and fixation in an abduction spica cast.

*Acute suppurative arthritis of the hip in premature infants. J.A.M.A. 156:303-307, 1954.

Injuries of the Atlas and Axis

B. J. S. GROGONO, M.B.
London

*Dislocation or fracture of the upper two cervical vertebrae is usually not fatal.**

FRACTURE of the atlas or axis may occur alone or with dislocation of the vertebrae, or displacement may be spontaneous. Immediate or delayed spinal cord injury may be associated.

Diagnosis of the injuries is aided by radiographic examinations. Projections used are anteroposterior through the open mouth and lateral. A normal radiogram does not exclude the possibility of subluxation of the vertebrae.

Protection is necessary after injury to relieve discomfort and prevent complications. A plaster collar may be sufficient for old people or when the lesion is slight. Sometimes manipulation and a plaster cast are necessary; when displacement is extreme, traction is applied. Operative reduction and fusion is performed for recurrent displacement, instability, and spinal cord manifestations.

Isolated fracture of the atlas generally occurs from impact of the head on the ground. Spinal cord injuries are noted in half of the cases. Damage to the occipital nerve occurs when the posterior arch is disrupted.

Spontaneous dislocation, the most common injury of the upper vertebra among children, is apparently due to laxity of the ligaments between the atlas and axis. The injury is associated with inflammatory processes in the neck.

With unilateral anterior displacement, the head is flexed and rotated

Anterior displacement

Posterior displacement

*Injuries of the atlas and axis. J. Bone & Joint Surg. 36-B:397-410, 1954.

away from the affected side. The voice may have a nasal quality. Tenderness is noted over the spinous processes of the atlas and axis. With bilateral anterior dislocation, the head is tilted forward and movement in all directions is limited. Compression of the spinal cord is more likely than when only one side is affected. The pharyngeal bulge is prominent.

With unilateral posterior dislocation, the neck and spinous process are rotated toward the affected side, but the pharynx does not bulge. Nuchal extension is observed.

When fracture and dislocation occur together, displacement may be anterior on either side or posterior. Anterior displacements are usually unilateral and seldom affect the spinal cord. If the injury is overlooked and early treatment is omitted, late paralysis or sudden death is possible. The danger is increased when the odontoid process is fractured. Skeletal traction is useful for reducing the dislocation and maintaining the reduction. Operative fusion is advised for multiple fractures.

Posterior fracture-dislocations are caused by hyperextension injuries and are less common than anterior displacements. Skeletal traction and operative fusion are sometimes necessary.

The hazard is great when spinal cord injury complicates a fracture-dislocation. Cord symptoms may be caused by compression, hematomyelia, or vascular disturbance. Sometimes the neurologic disturbance is produced by associated injury to the lower cervical spine. Early reduction is essential for all patients with neurologic manifestations. Pyramidal and motor disturbances are the most common, and the posterior column sense is generally intact.

Stress Fracture of the Pubic Ramus

LT. WALTER SELAKOVICH, M.C., AND CAPT. LEON LOVE, M.C., FORT LEONARD WOOD, MO., state that stress fractures of the pubic ramus, probably the result of unusual strain on the adductor and hamstring muscles, may occur with vigorous physical activity.

Bilateral pain in the inguinal, perineal, and adductor areas is the first symptom. Tenderness and pain occur in the area of the ischial spine, and a limp develops. Pain persists four to six weeks with gradual abatement; discomfort from traumatic fracture lasts one to two weeks.

Roentgenograms reveal an irregular, vertical break through both cortices with moderate calcification surrounding the area. As healing progresses, the fracture line is obliterated and calcification increases.

Recognition of a stress fracture is important to avoid unnecessary surgical exploration for a mistakenly diagnosed tumor.

Stress fractures of the pubic ramus. J. Bone & Joint Surg. 36:573-576, 1954.

Technic for Preserving Gluteal Power

BRYAN MC FARLAND, F.R.C.S., AND GEOFFREY OSBORNE, F.R.C.S.
University of Liverpool, England

*Ample exposure of the hip joint is attained and abduction power is restored early when the gluteus medius muscle is displaced rather than divided.**

SINCE gluteal power is necessary for successful arthroplasty, integrity of the muscle should be maintained when the incision for hip surgery is made. The gluteus medius can be removed from the field of vision but left intact.

Methods requiring division of the gluteus medius at the origin or insertion of the muscle often weaken abductor power even after strong suture or bony fixation. If Hueter's or Langenbeck's incision is used and the joint is approached in front of or behind an intact gluteus medius, the view is restricted even with expert retracting and positioning of the limb.

The procedure utilizes the thick, tendinous periosteum over the greater trochanter that connects the insertion of the gluteus medius to the origin of the vastus lateralis. The strong connective tissue may be dissected free from the bone and the intact muscles retracted forward.

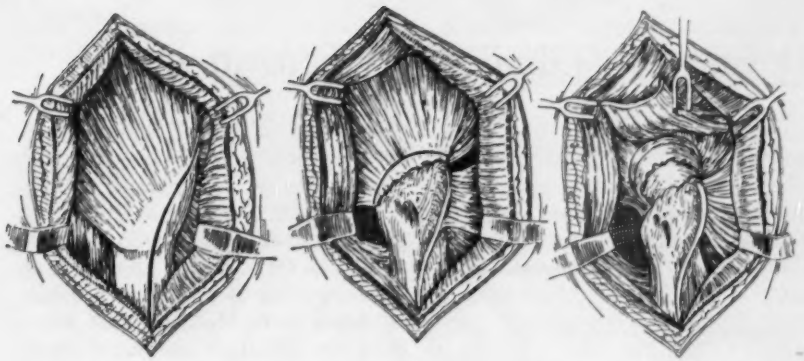
The midlateral skin incision is centered over the greater trochanter and affords visualization of the anterior, superior, and posterior aspects of the hip joint. The iliotibial band and gluteal fascia are divided along the entire length of the skin incision. The gluteus maximus is retracted posteriorly and the tensor fasciae latae anteriorly. The gluteus medius is then exposed and bluntly dissected from the gluteus minimus and piriformis.

The point at which the posterior gluteus medius joins the greater trochanter is identified. From this point, an oblique incision down to the skin is extended through periosteum and tendinous fascia, over the trochanter to the middle of the lateral aspect of the femur, and downward in the vastus lateralis to the limit of the skin incision (Fig. *a*).

The origin of the vastus lateralis, the attachment of gluteus medius, and the periosteum and tendinous junction are dissected from the bone in one piece with a scalpel or a sharp chisel. The mass composed of gluteus medius, vastus lateralis, and connecting periosteum can be displaced forward after dividing any attachments to the gluteus minimus or the intertrochanteric line. The gluteus minimus is split and divided (Fig. *b*) and retracted upward in order to expose the hip joint (Fig. *c*).

Bleeding may occur from the ascending branch of the medial cir-

*Approach to the hip. J. Bone & Joint Surg. 36-B:364-367, 1954.



a *b* *c*

cumflex artery behind the trochanter and from the transverse branch of the lateral femoral circumflex artery deep to the vastus lateralis. The blood flow is not troublesome, however.

Closure is done in layers after suturing the gluteus minimus and the joint capsule. The gluteus medius and vastus lateralis are returned to the original position, and the tendinous connection between them is sutured to the undisturbed part of the vastus lateralis, to the deep insertion of the gluteus maximus, and to the upper part of the quadratus femoris while the leg is abducted. About 3 strong sutures with chromic catgut are necessary for closure.

Pelvic Traction for Low Back Pain

SAMUEL VARCO, M.D., BUFFALO HOSPITAL OF THE SISTERS OF CHARITY, BUFFALO, N.Y., describes a method to relieve low back pain by pelvic traction which is well tolerated and allows free movement of the legs.

Traction is exerted on the iliac crests of the pelvis by a pelvic belt attached with strips of webbing to a common spreader bar near the foot of the bed. The belt is individually fitted and has a soft, pliable portion over the iliac crests with slip buckles on each side of the lower edge.

A strip of nonelastic webbing, 5 ft. in length, is attached to each slip buckle and passed through Dee rings with the apex near the patient's knee. From each Dee ring, a single strip of 3-ft. webbing is attached to either end of the spreader bar forming a Y. The bed is elevated and 18 to 20 lb. of traction is applied.

New method of pelvic traction for the relief of low back pain. Surg., Gynec. & Obst. 98:760-761, 1954.

Nailing for Tibial Shaft Fractures

J. OTTO LOTTES, M.D.
Washington University, St. Louis

*Union of open or closed fracture of the tibial shaft can almost always be attained by blind insertion of a nail.**

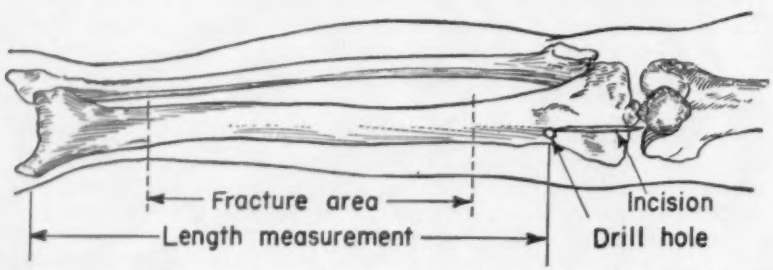
ANY fracture of the middle third or of the upper portion of the lower third of the tibia may be corrected by blind nailing, but fixation is not secure if the fracture is in the upper third or within 3 in. of the ankle joint. Multiple fractures can be nailed satisfactorily since one is always in the middle third of the shaft.

The necessary nail length is selected by measuring the uninjured leg from the palpable tip of the medial malleolus to the midpoint of the tibial tubercle. Measurement of the narrowest portion of the medullary canal, at the junction of the middle and the lower thirds of the shaft, determines nail diameter. A roentgenogram of the region is helpful. A 0.37-in. diameter nail is generally used. For very young patients a 0.31-in. nail is preferred.

The patient is placed so the hip is flexed about 50° and the knee 90°; the thigh is supported near the knee by a sling attached to an overhead frame. The ankle is secured in the foot traction apparatus. Traction is not necessary for delayed or nonunion fractures, and a regular operating table is used.

Strong traction is applied, and the tibial crests above and below the fracture site are palpated and aligned by derotation. A longitudinal incision is begun a fingerbreadth medial to the middle of the tibial tubercle and extended proximally 1½ in. The incision depth is to the bone in the distal inch but only through the subcutaneous tissue in the upper ½ in., to avoid entering the knee joint.

A 0.37-in. hole is drilled through the cortex at the lower end of the



*Blind nailing technique for insertion of the triflange medullar nail. J.A.M.A. 155:1039-1042, 1954.

incision opposite the middle of the tibial tubercle. The shaft may split if the hole is drilled below this level.

The drill is started at a right angle to the shaft. When the bit enters the medullary canal, the tip is aimed at the crest of the tibia at the junction of the middle and lower thirds, the drill handle being depressed until the skin over the knee is dented. A flat piece of metal between the drill and the skin prevents damage to the tissues; the metal is also used against the knee as a fulcrum to bring the tip of the drill forward so the hole can be drilled almost parallel to the long axis of the shaft.

A driver is attached to a 18-8 SMO stainless steel nail, the tip of which is inserted into the drill hole with the convex surface resting on the cortex of the tibia. The metal piece is inserted between the nail and the skin. After the nail reaches the posterior cortex, the midportion of the nail is depressed so the nail is nearly parallel with the long axis of the tibia and can be driven down the medullary canal. During nailing, penetration may be checked by laying a nail of the same size on the outside of the tibia. When the nail is 0.5 in. from the fracture, the crest of the tibia above and below the fracture site is palpated to check reduction and rotation.

The fracture is held in reduction as the nail is driven past the site. When only 1 in. protrudes, roentgenograms are made in 2 planes to determine the distance from the ankle joint. The nail is driven down until the driver strikes the cortex. The wound is closed, leg alignment is examined, and a plaster cast is applied from the toes to the midthigh.

Exercise of the toes and active elevation of the leg is started immediately. After ten to fourteen days, the cast and the sutures are removed and a roentgenogram is made to determine rotation and alignment.

A walking cast is applied from the toes to the midthigh with the knee straight, but not hyperextended. Weightbearing without support is allowed with short oblique or transverse fractures but is sometimes restricted with comminuted breaks. The cast is removed after six to eight weeks and the patient may bear weight. The nail is removed when the roentgenogram shows complete obliteration of the fracture site or can be left in permanently.

If infection occurs, free drainage is established by opening the wound and loosely inserting fine mesh gauze, and antibiotics are administered.

After delayed or nonunion fractures are nailed, bone grafting is done with strips of iliac bone. An osteotomy of the fibula is performed, approximately ½ in. being resected. The walking cast is left on about one month longer.

Of 239 fractured tibias treated by blind nailing, 2.1% failed to unite. None of the 10 deaths were caused by fat embolism and all occurred over one week postoperatively. Tibial nailing was successful for 12 of 13 patients with infected legs when other methods had failed.

Diagnosis of Prostatic Carcinoma

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*Needle biopsy is a useful adjunct in confirming the diagnosis of cancer of the prostate.**

MALIGNANT disease of the prostate may be classified in 4 stages: [1] the very early discrete nodule; [2] local spread within the prostate; [3] local spread outside the prostate; and [4] local extension outside the prostate together with distant metastases. While the first 2 groups are potentially amenable to appropriate surgery, the last 2 are not considered curable by present procedures.

With the exception of open surgical biopsy, rectal palpation of the prostate by an experienced examiner is the best diagnostic method. The consistency, gland fixation, obliteration of sulci, lateral ligament induration, and contour irregularity can be determined and should be noted in a pictorial record. Biopsies are made when doubt exists as to the nature of an induration. Cystoscopic examination, marrow aspiration, blood chemistries, and roentgen examinations are occasionally helpful.

Expressed prostatic secretion, or urinary sediment when prostatic massage is not productive, may be examined by skilled personnel for tumor cells. When smears are unproductive because of cell sparsity, cell concentration may be obtained by centrifuging freed cells in a tenacious mucous plug, followed by smearing and fixation. The cellular pattern may be distorted by previous hormonal therapy.

A Silverman needle biopsy can be easily and safely performed in the office under local anesthesia, with the occasional additional use of Trilene analgesia. The needle produces little trauma, is simply constructed and easily maneuverable, and with good technic obtains adequate tissue. The tissue may sometimes be small and friable, but several cylinders can be quickly taken and are usually sufficient for diagnostic purposes.

With the patient in lithotomy position, the needle is introduced low in the perineum, near the anus, and slightly lateral to the midline. The needle can be palpated and easily guided with the rectal finger to the area of the gland to be biopsied. The exact area of induration can be entered by depressing the outer end of the needle. The inner blades are advanced to extend beyond

*Methods of diagnosis of carcinoma of the prostate: a comparison of clinical impression, prostatic smear, needle biopsy, open perineal biopsy and transurethral biopsy. J. Urol. 72:450-465, 1954.

the end of the outer sheath, penetrating the nodule and engaging the desired tissue. The outer needle is then advanced 2 to 3 cm. while the inner blades are held stationary. The outer sheath is then rotated 360° severing the cylinder of tissue at the base.

Implantation of carcinoma along the needle's course rarely occurs. No untoward sequelae result from accidental entry into the bladder or rectum.

An open perineal biopsy is the standard method for confirmation of a suspected carcinoma. Wedge biopsies removed through the classical Young or Belt's subsphincteric exposure are utilized.

Transurethral resection to relieve obstruction is ordinarily not helpful except for advanced disease, since most tumors begin in the posterior part of the gland.

In the inoperable stages, the clinical impression was correct in 97% of 99 patients with findings suggestive of carcinoma, as confirmed by open biopsy. In the operable stages, the clinical impression was correct in slightly over half the cases. The error was in overdiagnosis of cancer, since several cases considered positive yielded negative biopsies. The over-all accuracy was 74%.

Although needle biopsy cannot compete with open perineal biopsy for excluding carcinoma, other values still remain. If positive in early cancer, a radical prostatectomy can be done directly. If positive in far-advanced cases, the diagnosis is confirmed, and estrogen treatment, with or without orchiectomy, may be given.

The procedure is also of assistance if palliative intraprostatic injections of radioactive colloidal gold or chromic phosphate are being considered. Needle biopsy can also be utilized for palliative treatment when subsequent histologic examinations are needed.

Rupture of the Testicle

R. M. LAIRD, F.R.C.S., ROYAL INFIRMARY, PRESTON, ENGLAND, believes that closed rupture of the testicle may sometimes be disclosed by surgical exploration after testicular trauma associated with hematocele and pain and swelling. In such instances, the tunica albuginea ruptures with bleeding into the tunica vaginalis, but the overlying skin is not lacerated.

Since local tenderness with hematocele prevents full examination, severe contusion and rupture can be differentiated only by exploration. If operation reveals only a hematocele, the clot is evacuated. When the testicle is ruptured, conservative debridement of the tissue is performed, and the tunica albuginea is loosely approximated with catgut mattress sutures. A drain is introduced before the tunica vaginalis is closed. Interrupted sutures are used for the scrotal skin.

Closed rupture of the testicle. Lancet 266:601-602, 1954.

Genitourinary Emergencies in Adults

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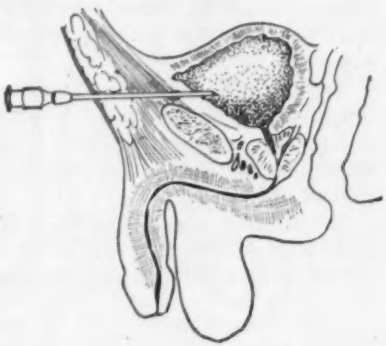
*Urinary retention, trauma, anuria, infections, renal colic, foreign bodies, priapism, and vaginismus constitute most of the acute genitourinary emergencies.**

GENERAL practitioners are usually the first to see acute genitourinary tract disorders. Although some patients require the services of a urologist, nearly all may be given initial and definitive treatment by the first attending physician.

The most common urologic emergency, acute *urinary retention* in the male, is most frequently caused by an enlarged prostate gland. Other causes include phimosis, urethral stricture, neoplasm, urinary calculus, blood clots, and spasm of the sphincter induced by such drugs as ephedrine, Benzedrine, and the mercurial diuretics. Acute retention is relatively uncommon in females and is usually caused by stricture, incarcerated fibroids, ureterocele, or prolapsed bladder. Catheterization is seldom difficult in women.

When retention is caused by benign prostatic hypertrophy, the bladder is drained, preferably with an indwelling, small-bore catheter, such as the No. 8 Tiemann type. When preliminary bladder drainage or repeated catheterization is necessary to allow recovery of kidney function before treatment of the enlarged prostate, an indwelling Foley catheter is used. If the patient has severe pain and a catheter cannot be passed successfully into the bladder, a large-bore needle is inserted in the midline directly above the pubis and the bladder is drained (see illustration).



With malignant disease of the prostate, catheterization is often difficult or impossible. However, onset of retention is gradual, and emergency bladder drainage is usually not required. Transurethral resection of the obstructing gland is done, with administration of female hormones and, occasionally, orchiectomy. Suprapubic cystostomy is seldom necessary.

The patient with a chronically distended bladder in whom longstanding back pressure may cause

*Genito-urinary emergencies in practice. J. Irish M. A. 35:232-236, 1954.

irreparable renal damage should be treated with immediate and prolonged bladder drainage.

Blood clots from urinary tract bleeding may cause obstruction and usually can be removed satisfactorily by bladder irrigation with a large-bore catheter and an aspirating syringe. Emergency surgery may be required if hemorrhage is profuse. Vesical tumor and enlarged prostate are the commonest causes of the bleeding.

Urinary retention best managed by a single catheterization is that occurring in an inebriated or hysterical person or in an individual in whom drugs have had a tonic effect on the sphincters.

Trauma is responsible for a number of urologic emergencies. A direct blow on a distended bladder almost always causes intraperitoneal rupture; extraperitoneal rupture is less frequent. Intraperitoneal rupture is associated with early shock, abdominal rigidity, and inability to void. Surgical repair of the damaged bladder and drainage should be done immediately.

If the patient has received a blow to the lower abdomen and is unable to void or passes small amounts of bloody urine, the possibility of extraperitoneal bladder rupture must be considered. Suprapubic induration and swelling, rising pulse rate, and fever occur if early surgery is not done.

Extravasation of urine may occur after fracture of the pelvis with urethral injury or in patients having urethral stricture and infection. Prompt bladder drainage and antibiotic therapy are necessary.

Rupture of the kidney is caused by injuries to the trunk, most often by a blow on the loin. In such instances, hematuria is presumptive evidence of renal injury. Continued hemorrhage necessitates blood replacement and nephrectomy. Before surgery, however, the function of the contralateral kidney must be established, preferably by excretory urographic examination.

Anuria is caused by obstruction of the ureter. All patients require careful management with repeated blood chemical determinations.

When the obstructing mechanism is advanced malignant disease, nephrostomy may be performed for temporary relief. Obstruction often occurs in patients with renal tuberculosis as healing and fibrosis progress. Prolonged sulfonamide therapy without adequate fluid intake sometimes leads to obstruction of the renal pelves and ureters with sulfonamide crystals. Therapy includes catheterization and dissolution of the crystals.

Some urinary *infections* must be considered as urologic emergencies. With acute pyonephrosis, nephrectomy should be done if the contralateral kidney is functioning. Occasionally, with severe disease, only drainage of the kidney can be done initially.

Renal carbuncle and perinephric abscess require surgical drainage and antibiotic therapy. Acute epididymitis is usually due to either coliform infection or some nonspecific cause, such as forcing urine from a full bladder along the vas deferens during heavy exercise. Treatment includes bed rest and an-

tibiotics. With acute disease, pain may be relieved by injection of 20 cc. of 2% procaine into the spermatic cord below the inguinal ring.

Renal colic rarely requires emergency removal of a stone. Intramuscular injection of morphine and atropine usually provides adequate relief of pain.

Foreign bodies in the urethra can be removed simply with forceps. However, an object which has passed into the bladder should be removed with an endoscope. *Priapism* is best managed by conservative measures, since the condition usually subsides spontaneously in six weeks. Acute *vaginismus* is treated with administration of general anesthesia.

¶ DISSEMINATED PROSTATIC CARCINOMA may be briefly arrested with cortisone treatment. The hormone, 50 to 200 mg., was given daily in 4 divided oral doses to 10 patients with severe exacerbations of cancer after previous remissions achieved by orchiectomy and estrogen therapy. Gerald M. Miller, M.D., and Frank Hinman, Jr., M.D., of the University of California, San Francisco, report that subjective improvement was observed in 8 of the patients and discernible benefit with diminution in the size of the lesion in 6.

J. Urol. 72:485-496, 1954.

¶ DEATH AFTER AORTOGRAPHY may result from toxic or allergic reactions to radiopaque media. Using the translumbar approach, A. J. Josselson, M.D., and Joseph H. Kaplan, M.D., of Alhambra, Calif., injected 15 cc. of a 75% solution of Neo-Iopax into the aorta of a patient with hypertensive cardiovascular disease and an atrophic left kidney. Vomiting, facial and cervical edema, and myalgic pains were noted the next day. Intractable ileus and progressive azotemia occurred, and uremic pericarditis and diffuse petechial rash appeared. The patient died on the twenty-sixth day after aortographic examination.

J. Urol. 72:256-260, 1954.

¶ TUBERCULOUS EPIDIDYMITIS should be treated by epididymectomy in conjunction with antituberculous drugs. Medicaments alone are ineffective in healing tuberculous epididymal lesions, even though the condition apparently becomes quiescent. J. Robert Rinker, M.D., of the Medical College of Georgia, Augusta, believes that early operation should be done for the beneficial systemic as well as local effects. Orchidectomy is not justified unless testicular involvement necessitates the procedure.

South. M. J. 47:193-196, 1954.

Metastases to the Brain and Spine

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*The breasts and lungs are the most common sources of tumor metastases to the brain and spinal cord.**

THE bulky parts of the *brain* are the first to be affected by metastatic neoplasms. Lesions therefore occur more commonly in the white matter than in the gray. Metastases are more often multiple than single and are usually round or oval in shape. Transference is probably by way of the arterial blood supply.

Intracerebral lesions are well demarcated from surrounding neural parenchyma and frequently can be easily shelled out. Size of the mass varies from microscopic dimensions to 6 cm.; larger growths are uncommon.

The usual gray, granular appearance of the tumor changes in some instances. Necrotic foci may be scattered throughout the mass, or, as with pulmonary carcinoma, the entire center may become necrotic and the tumor resemble a brain abscess. Therefore, the surgeon and pathologist should always carefully examine the nature of the wall surrounding any abscess-like lesion.

In some instances, the metastatic tumor may be hemorrhagic and is mistaken for a thrombosed aneurysm or simple hemorrhage elsewhere in the brain. The central portion of some lesions contains clear or cloudy liquid. In such instances, the tumor is lined with thin layers of acinar structures and neoplastic tissue is not macroscopically visible. With severe jaundice, the neoplasm may be bile-stained. Calcification rarely occurs.

Surrounding cerebral tissue may become extremely swollen. Swelling has no relation to size or number of metastases, and the cause is unknown.

Dural tumors resemble intracerebral lesions in color and texture and may be on either surface of the dura, although the cerebral epidural surface is usually implicated by extension from the cranial bones. The dural venous sinuses are seldom affected. The tumors may become confluent and form a helmet of infiltration over the brain. A subdural hematoma may develop if the metastases cause bleeding.

*Metastasis of neoplasms to the central nervous system and meninges. Arch. Neurol. & Psychiat. 72:133-153, 1954.

Metastatic tumors in the *spinal cord* are usually epidural and seldom penetrate the inner surface of the dura. Damage to the spinal cord is produced by vertebral infiltration and fracture, compression of blood vessels, epidural compression of the cord, or infiltration of nerve roots. Intraspinal metastases within the substance of the cord seldom occur; leptomeningeal infiltrations may result from downward seeding of neoplasm.

Microscopically, more than half of the lesions are acinar and about one-third are anaplastic.

¶ POSTPARTUM HEMORRHAGE may be averted or diminished in severity by the simultaneous administration of ergonovine and hyaluronidase. Norman Kimbell, M.B., of Peterborough Memorial Hospital, England, finds that the incidence of excessive bleeding among 2,002 patients was reduced from 6.4% to 0.9% when 0.5 mg. of ergonovine and 1 mg. of the enzyme were injected intramuscularly when the fetal head appeared. Use of the two agents frequently shortens the third stage of labor to a period of less than ten minutes.

Brit. M. J. 4880:130-131, 1954.

¶ TREATMENT OF CONDYLOMA ACUMINATUM with 25% podophyllin ointment during the last trimester of pregnancy may cause fetal death and maternal toxemia. In 1 such case postmortem examination of the infant revealed anoxia as the only cause of death. R. L. Gorthey, M.D., and M. A. Krembs, M.D., of Marquette University and Milwaukee County General Hospital, Milwaukee, ascribed ill effects in mother and child to circulatory embarrassment from absorption of the drug.

Obst. & Gynec. 4:67-74, 1954.

¶ NEONATAL ASPHYXIA caused by maternal sedation with Pethidine (meperidine hydrochloride) may be prevented by injection of *N*-allylnormorphine hydrobromide (Nalline) into the uncut umbilical vein. Respiratory depression prompted administration of 0.5 mg. of the drug to 28 of 203 infants born of mothers given meperidine hydrochloride; 12 of the treated babies required resuscitation as well, note Susanne J. Paterson, M.D., of Elsie Inglis Memorial Maternity Hospital, Edinburgh, and Frederick Prescott, Ph.D., of Wellcome Research Institution. Artificial respiration was necessary for 31 (91%) of 34 babies with similar asphyxia not given Nalline.

Lancet 266:491-493, 1954.

Nonoperative Management of Abortion

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*Inevitable abortions can almost always be successfully completed by a nonoperative method.**

HEMORRHAGE, trauma, and infection are infrequent when abortions are completed without operation. Other advantages are that threatened abortions are not curetted inadvertently, an anesthetic is not required, the average hospital stay is shorter than with surgical management, and operative expense is avoided.

Abortion is inevitable during the first twenty weeks of gestation when [1] uterine contractions occur every five minutes or less, [2] dilatation and effacement of the cervix is progressive, [3] the amniotic sac ruptures, or [4] uterine bleeding is twice as profuse as the patient's ordinary menstrual flow or blood clots are 4 cm. or larger in diameter.

About two-thirds of inevitable abortions can be completed without hospitalization. At the clinic, 0.5 cc. of pituitary extract is given subcutaneously at thirty-minute intervals for 4 injections. If further treatment is necessary, a rectoabdominal examination is performed and the product of conception is expelled by means of simple expression.

When abortion is not completed, sepsis is evident, or blood loss or shock is excessive, the patient is admitted to the hospital. Blood transfusions, clyses, antibiotics, and morphine are used as needed. When the condition of the patient is satisfactory, another course of 4 subcutaneous injections of 0.5 cc. of pituitary extract is begun. An aseptic vaginal examination is made an hour after the last injection if expulsion is not complete, and any products of conception visible in the vagina or cervix are removed with sponge forceps. The uterine cavity is not explored.

If the procedures are not successful, an Ergotrate tablet is administered orally every four hours for 6 doses and another course of pituitary injections is given. The Ergotrate and extract therapy may be repeated.

If the products of conception cannot be seen by speculum examination, the patient is hospitalized for four to five days. The products can be visualized by vaginal examination and removed if bleeding occurs. Abortion is considered complete if bleeding subsides and the size of the uterus and other signs

*The nonoperative treatment of inevitable and incomplete abortions. Am. J. Obst. & Gynec. 68:576-588, 1954.

are compatible. If abortion is actually incomplete, eventual bleeding or infection requires readmission of the patient to the hospital.

If the abortion is not completed within twenty-four hours by nonoperative treatment, surgery should be considered.

Infection seldom develops during treatment. Sepsis at the time of admission increases the danger of severe complications and is the primary cause of death.

Transfusions are required more often by septic than noninfected patients. Though few patients have shock after admission, the nonoperative procedure is occasionally abandoned because of excessive bleeding.

Among 454 patients requiring hospitalization, abortion was successfully treated by the nonoperative method in about 92%; 9 women died. Abortion was completed within twenty-four hours after admission among 399 women; the completion was spontaneous in 38 instances, after pituitary extract in 71, and accomplished by removal of product of conception from the vagina with sponge forceps in 290.

Endometrial Dysfunction and Sterility

EDWARD T. TYLER, M.D., UNIVERSITY OF CALIFORNIA AT LOS ANGELES, believes that infertility in women is often due to insufficient endometrial secretions. In such cases, implantation of the ovum does not take place because the uterine epithelium is inadequately prepared.

Preparation of the endometrium for conception depends on pituitary stimulation to the ovary and production of estrogens and of corpus luteum, which usually occurs after ovulation. Basal temperature studies, pregnanediol assays, and endometrial biopsy determine whether corpus luteum secretions are adequate.

Normally, luteinization is accompanied by a sudden and prolonged rise in body temperature of up to 1° F. Pregnanediol is excreted in the urine in amounts of 8 to 10 mg. every twenty-four hours.

When endometrial preparation for nidation is inadequate, 10 mg. of progesterone, 1 mg. of estradiol trimethylacetate, and 1,000 I.U. of chorionic gonadotropin are administered intramuscularly on alternate days. Daily supplemental oral doses of estradiol benzoate and progesterone are also given. As soon as temperature studies determine that ovulation has occurred, treatment is begun and is continued for sixteen weeks.

Endometrial dysfunction may also be a factor in habitual abortion. However, the hormones have prophylactic rather than therapeutic value.

Treatment of the inadequate endometrium in infertility. California Med. 81:13-17, 1954.

Ovarian Cysts During Pregnancy

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*Small ovarian cysts found during pregnancy often disappear spontaneously after delivery.**

THE diagnosis of ovarian cyst in pregnancy can be made most easily during the first trimester. After this time, the cyst is usually drawn up and obscured by the enlarging uterus unless too large to rise or incarcerated by pelvic adhesions.

The advance of pregnancy beyond the first trimester does not preclude the possibility of palpating a cyst alongside the body of the uterus. Removal is possible during the second trimester if necessary or the cyst may be treated expectantly without complications. A cyst may be found by chance at cesarean section or, if discovered late in pregnancy, may require cesarean section for removal.

The chief dangers from cysts over 6 cm. are torsion of the pedicle, hemorrhage, gangrene, and infection. A cyst carried high into the abdominal cavity is easily influenced by intestinal distention or body movements.

If the cyst is limited in size to 5 or 6 cm., the pedicle is probably able to resist torsion. Smaller cysts are usually functional and should not be operated upon unless areas of firmness or doughy consistency suggest cellular proliferation or dermoid or teratoid growth.

The best time for removal of a large cyst is early in the fourth month of pregnancy. By this time, the possibility of a blighted ovum has passed, nausea and vomiting have subsided, the placenta has produced sufficient progesterone, and the size of the uterus is not great enough to hinder the operation.

Complications attending surgical removal are infrequent but may include inadvertent rupture of the cyst, hemorrhage, or an accidental extension of the uterine incision. When necessary, the corpus luteum may be removed with a low incidence of postoperative abortion, even when hormones are not given.

If a cyst is not detected until the puerperium, a period of observation before operation is justified, as even large cysts of uniform consistency frequently decrease in size or disappear.

Of 185 patients, 176 had unilateral cysts, 7 bilateral, and 1 culde-sac. Of 111 cysts managed conservatively, only 11 persisted into the puerperium. Of 55 exceeding 6 cm. in size, 40 were treated surgically. No maternal deaths occurred and the fetal mortality was not increased.

*Ovarian cyst complicating pregnancy. Am. J. Obst. & Gynec. 68:594-605, 1954.

Management of Endometrial Cancer

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*Localized cancer of the corpus may be cured by operation alone or by combined use of intracavitary radium and surgery.**

ACTIVE treatment of uterine carcinoma may not require extremely radical surgery but should usually include some form of radiation.

A dose above 4,000 mg. hours of local irradiation, with or without supplements, is considered adequate and is best given in divided doses three to five weeks apart. When the lesion is not entirely localized to the corpus, or is highly anaplastic, high voltage roentgen therapy should be given after surgery. Intensive external irradiation alone preoperatively may considerably decrease the size of the uterus and permit easier operation. Residual cancer cells are definitely fewer in operative specimens previously irradiated.

Surgical removal of cancer of the corpus must include an adequate vaginal cuff to prevent recurrence in the vault. Involved adnexae must be excised, but recent studies suggest that exenteration or radical node dissection is unnecessary and even inadvisable for some patients.

About 15 to 20% of patients with fundal carcinoma show lymph node metastases, and none has survived five years, regardless of the type of surgery. The most vigorous postoperative irradiation does not destroy the lymphatic metastases. If only one or two pelvic nodes are involved, a second procedure may prolong life, but if endometrial cancer has spread to the lymphatic vessels, vascular metastases are often associated. Therefore, radical surgery should not be done routinely.

Operation for endometrial cancer should be preceded by ligation of the tubes and infundibulopelvic and uterosacral ligaments and suturing of the cervix. When the lesion is limited to the corpus, simple hysterectomy is as effective as more extensive surgery in terms of five-year survivals. If the adnexae are affected, salpingo-oophorectomy must be done. When the rectum or bladder are involved, exenteration produces a few five-year cures, but the value of the procedure is equivocal.

Eventual prevention of intrauterine cancer may be facilitated by frequent diagnostic curettage or by routine cytologic smears in all women over 40 years of age and abstinence from estrogens. The present high cure rate of localized lesions may be improved by hysterectomy rather than radiation to control severe uterine bleeding.

*The management of carcinoma of the corpus. Am. J. Obst. & Gynec. 68:737-760, 1954.

Definition of Fibrosis Uteri

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*Diffuse hypertrophy of the uterus better describes the disease entity commonly termed fibrosis uteri, since formation of fibrous tissue is not a prominent feature.**

THE smooth, symmetrically enlarged uterus with fibrous consistency and no significant leiomyomas or endometrial or other changes to account for the chief symptom, uterine bleeding, is generally designated "fibrosis uteri." Regardless of the etiology, however, the amount of demonstrable fibrosis should be considered as part of the physiologic aging process of the uterus. A more accurate designation would be "diffuse hypertrophy of the uterus."

Pregnancy apparently is a definite factor in this diffuse enlargement. During the involutionary process after each pregnancy, elastic tissue gradually increases in the stroma of the myometrium and in all layers of the blood vessel wall. This frequently completely obliterates the vessel lumen. The process probably accounts for the increased firmness and some of the enlargement of the uterus. In addition, the uterus fails to return entirely to the pregravid state after termination of each pregnancy. Many multiparous women have slight postpartum myometrial and parametrial infection which is capable of initiating histopathologic changes.

The entity characteristically appears in multiparous white women who are short and obese and between the ages of 40 to 50. About one-half of patients have menorrhagia only; others also have lower abdominal pain with a sense of weight in the pelvis. Backache, metrorrhagia, and dysmenorrhea occur less frequently. The uterus is freely movable. Pelvic findings are often confused with those of uterine tumors.

In some cases, curettage is sufficient therapy. In women of childbearing age, this procedure may be combined with dilatation and, if necessary, a controlled course of androgens.

Hysterectomy should not be done unless these methods fail to control bleeding. In women over 45 years of age, the choice of operative treatment depends upon evaluation of the amount and duration of the bleeding and the pelvic findings. Hysterectomy should be preceded by curettage in order to detect any possible intrauterine malignant disease.

A study was made of enlarged uteri surgically removed from 50

*What is "fibrosis uteri"? Obst. & Gynec. 4:311-321, 1954.

women between the ages of 28 and 54 years; 46 of the patients were multiparous. All of the specimens were diffusely enlarged with no gross or microscopic lesions which could account for hypertrophy or bleeding.

Findings included increased collagen throughout the myometrium, chronic inflammatory changes, parity effects, muscle-cell hypertrophy, and endometrial hyperplasia. Chronic inflammation of the cervix was a constant finding.

The Fundus Oculi During Flight Blindness

T. D. DUANE, M.D., NAVAL AIR DEVELOPMENT CENTER, JOHNSVILLE, PA., reports that amaurosis fugax during positive acceleration is a result of retinal ischemic anoxia.

Multiples of gravitational force occur as positive, negative, or transverse g forces, depending upon how the force is vectored through the body. Positive g occurs in dive-bombing and steep inside turns and produces temporary loss of vision even though the subject can cerebrate and also respond to both tactile and auditory stimuli.

In an experiment to study the fundus oculi of the subject during positive g, the observer was positioned transversely so that only slight ocular effects would result. The subject fixed his eye on a central light and reported visual changes to the observer.

Objective changes were first noted one to two seconds after arrival at the 4- to 5-g level. Arteriolar blood was darker and the entire tree pulsated rhythmically. Two to five seconds later, the subject noted a dimming, then a loss of peripheral vision.

Arteriolar exsanguination and collapse appeared objectively two to three seconds after the rhythmic pulsations. Several seconds later, the subject experienced loss of central light. Finally, when the peak g was lowered, central and peripheral light and arteriolar tree pulsations returned. Venules became distended but returned to normal after only 2 or 3 beats. Radial artery pressure at eye level decreased at the time of the blackout.

Blackout is apparently a result of anoxia of the ganglion cell and nerve fiber layers of the retina. Animal experiments indicate that intraocular and intracranial pressures decrease during positive g. A blanching of the arteriolar tree was observed in an ape at 3.5 g for eight seconds. The blanching was not preceded by pulsations. No demonstrable ophthalmoscopic changes were noted at 3 g for seven seconds. However, because fixation could not be maintained on the observed eye, experiments with animals warrant repetition for verification.

Observations on the fundus oculi during black-out. Arch. Ophth. 51:343-354, 1954.

Ophthalmic Aspects of Toxoplasmosis

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*Eye lesions may occur alone or as part of a syndrome in children with toxoplasmosis.**

CHILDREN of all ages are subject to toxoplasmosis, and the acute form of the disease is noted among adults. Manifestations among newborn infants, including encephalitis, rash, jaundice, hepatomegaly, hydrocephalus, and chorioretinitis, may be apparent at birth or not for several weeks, depending upon whether placental transmission took place early or late in pregnancy.

During infancy and childhood the symptom complex consists of convulsions, microcephalus, psychomotor retardations, chorioretinitis, and cerebral calcification.

A prodromal stage with malaise and weakness initiates the disease among adults. After several days, chills and fever begin suddenly and a maculopapular rash appears. Acute encephalitis and myocarditis or fatal pneumonitis may occur.

Encephalitis with chorioretinitis is the most common finding. Ocular inflammation is a valuable diagnostic sign when congenital cerebral damage is caused by toxoplasmosis.

The eye lesions may be bilateral or unilateral. The macula is most frequently involved but any part of the uvea may be affected; examination may reveal previous iritis, as shown by posterior synechia, uveal pigment on the lens, and iris atrophy.

Toxoplasmosis is a possible cause of congenital ophthalmic anomalies including persistent pupillary membrane, narrowing of the palpebral fissure, microcornea, posterior cortical cataracts, posterior lenticonus, severe anisometropia, optic atrophy, papilledema, nystagmus, and muscle weakness.

Toxoplasma is a crescentic, oval, or pyriform protozoan parasite that varies from 2 to 7 microns in length and 2 to 4 microns in width. The organisms multiply by binary fission and only within living cells. Continued reproduction within a cell produces a cyst.

A dye test is used to diagnose infection with the parasite. Serum is serially diluted and a mixture of *Toxoplasma* organisms and normal human serum containing accessory factor is added. The preparation is incubated for one hour at 37° C.

Portions from each tube are then mixed with alkaline methylene blue. The percent of extracellular *Toxoplasma* organism that will maintain a clear cytoplasm is determined. When 50% of the organisms do not remain clear, the end point of titration has been reached. Sera from healthy persons rarely give

*Toxoplasmosis. Am. J. Ophth. 38:194-201, 1954.

positive reactions in greater than 1:64 dilution.

Within ten to twenty-one days after infection, the dye test becomes positive. Complement-fixing antibodies may not be demonstrated for a month.

Treatment is usually unsuccessful, though sulfadiazine and sulfamerazine sometimes control acute toxoplasmosis and Promin and Endochin are effective against acute experimental disease in some instances.

¶ ANOGENITAL WARTS are effectively treated with a 3% solution of podophyllin in propylene glycol. No severe reactions develop, reports Ronald Scutt, M.B., of the Royal Naval Barracks, Portsmouth, England. The area is first cleansed with 1% cetrimide and the medicament is applied with an orange stick and cotton-wool. The area is powdered with talc. The prepuce is adjusted to cover the glans penis. Lesions usually subside after four or five days of therapy.

Brit. M. J. 4884:397-398, 1954.

¶ INFANTILE ECZEMA may be satisfactorily treated with a 2.5% hydrocortisone free alcohol ointment. The favorable reaction in 18 of 30 cases when the unguent was applied two or three times daily convinces Victor H. Witten, M.D., and associates of New York University–Bellevue Medical Center, New York City, that the medicament is the simplest and most rapidly effective topical measure available. The vehicle consists of 15% wool fat, U.S.P., 10% liquid petrolatum, and 75% white petrolatum. To this is added hydrocortisone free alcohol in a concentration of 25 mg. per gram.

Am. J. Dis. Child. 87:298-304, 1954.

¶ LUPUS ERYTHEMATOSUS of the chronic cutaneous discoid type may be effectively treated with chloroquine (Aralen). Donald M. Pillsbury, M.D., and Coleman Jacobson, M.D., of the University of Pennsylvania, Philadelphia, usually give 250 mg. of the drug by mouth daily for one month and then every other day for three or four weeks. No toxic reactions occurred among 16 patients observed for as long as ten months. Of these cases, 6 progressed to resolution, 4 evinced questionable residual activity, and 5 showed a few small areas of disease. The remission or quiescence was equal to or superior to that achieved with quinacrine (Atabrine) and without the objectionable dermal pigmentation. However, until results of repeated and prolonged therapy are known, the possibility of toxic effects cannot be dismissed.

J.A.M.A. 154:1330-1333, 1954.

SPECIAL EXHIBIT

NOISE IN INDUSTRY

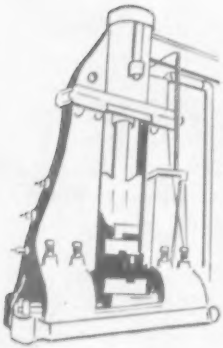
MEYER S. FOX, M.D.,
AND PAUL J. WHITAKER, M.D.
Milwaukee

- The Problem
- Human Hearing
- Effects of Noise
- Hearing Evaluation
- Hearing Conservation Programs

A Modern Medicine Special Exhibit adapted from a presentation made at the meeting of the Wisconsin State Medical Society in Milwaukee.

SPECIAL EXHIBIT

THE PROBLEM



► That impairment or loss of hearing can result from exposure to loud sounds has been known for centuries. A professional deafness of braziers and blacksmiths was noted even before the nineteenth century, and in the late 1800's a number of writers dealt with the impairment of hearing in boilermakers, weavers, and railroad men.

Since that time—particularly during and since World War II—the rapid growth of industry and the development of more powerful machinery have created more and more noise and little control for it. In recent years, the effects of noise on hearing have been investigated, and the upsurge of compensation claims for auditory impairment has attracted nation-wide attention to the problem. There is hope now that investigations and conservation programs will succeed in lessening the effects of industrial noise as other industrial hazards have been decreased.

SOUND . . . THE SENSATION produced in the brain by sound waves

AND SOUND WAVES are produced by variations in air pressure due to the physical vibrations of a material body.

NOISE . . . UNWANTED SOUND . . . irregular and unpleasant

Important Characteristics of Sound

FREQUENCY **LOW** **HIGH**

The number of variations or vibrations per second . . . expressed in cycles per second

INTENSITY **LOW** **HIGH**

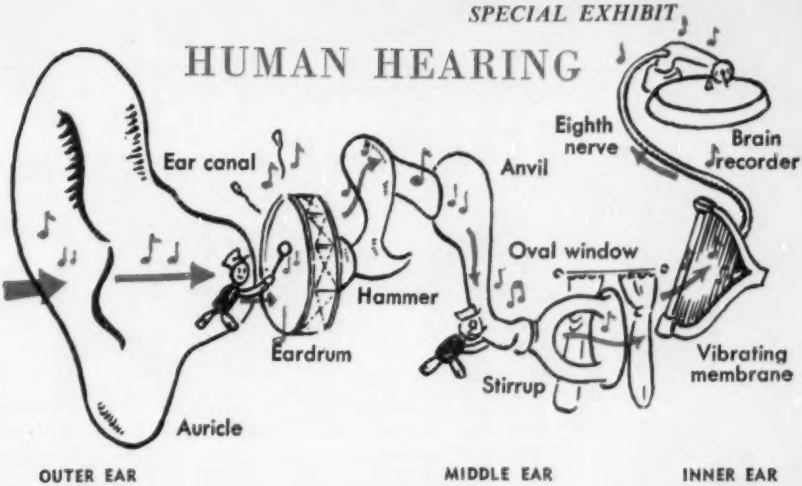
The amount of energy given off by the sound source . . . expressed in decibels

COMPLEXITY

The relative presence or absence of overtones . . . gives rise to the experience of tonal quality

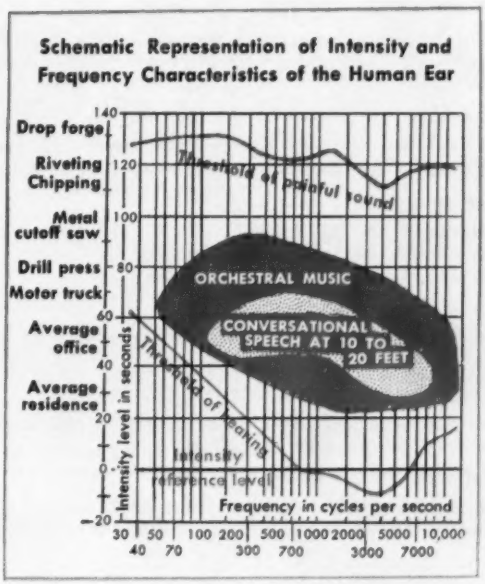
SPECIAL EXHIBIT

HUMAN HEARING



HOW WE HEAR

This is a simplified description showing how sound waves striking the eardrum operate the 3 smallest bones of the body—the ossicles, known as the hammer, the anvil, and the stirrup.



The stirrup vibrates the oval window—a thin membrane stretched across the entrance to the inner ear.

Movement of the oval window is passed to the cochlea, the organ of hearing which "feels" the mechanical movements caused by the sound waves.

This vibrating membrane, containing 25,000 tiny, hairlike cells, analyzes the vibrations received and sends the results to the brain via the eighth, or hearing, nerve.

SPECIAL EXHIBIT

EFFECTS OF NOISE

Exposure to intense noise can and does cause:

→ → → 1] Loss of hearing ability

→ → → 2] Interference with communication

Factors Influencing Loss of Hearing

Intensity level of noise

Greatest intensity of high-frequency noise which human ears can sustain without being affected is approximately 95 decibels.

Duration of exposure to noise

The longer the period of exposure, the greater the damage. Brief exposure may lead to temporary injury, long exposure to permanent damage.

Frequency spectrum of noise

High-frequency sounds are more traumatizing than low-frequency sounds.

Individual susceptibility

Definite differences exist in individual ability to withstand noise damage and in rate of recovery from auditory fatigue.

Age of individual

A gradual hearing loss accompanies advancing age, possibly as the result of accumulated exposure to noise.

Coexisting ear disease

A conductive hearing loss will afford some protection against noise, but perceptive hearing loss may be aggravated, especially in young people.

Character of surroundings

Room acoustics play an important role in loss of hearing.

Distance from source

Sound intensity decreases with distance, but room acoustic conditions alter this effect.

Position of ears to sound waves

When incessant sound comes from a single source, the position of the ears in relation to the sound is important.

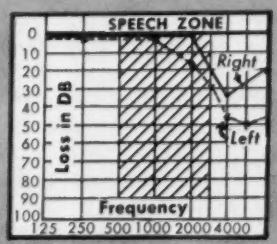
HEARING EVALUATION

QUANTITATIVE TESTS

Pure Tone Audiometry

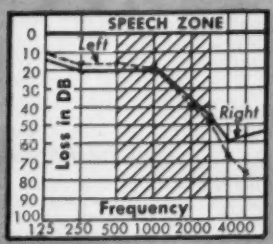
Speech Audiometry

Audiograms typical of occupational hearing impairment



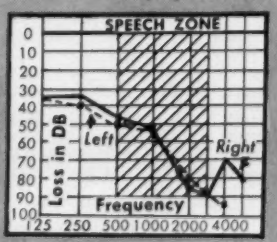
Early Loss

No involvement of speech zone



Moderate Loss

Slight involvement of speech zone



Severe Loss

Serious involvement of speech zone

• The onset of occupational deafness is insidious; development is progressive but slow. With properly supervised, periodic audiometric examinations, early changes can be detected and serious losses prevented.

QUALITATIVE TESTS

Tuning fork | Voice | Coin click | Watch

SPECIAL EXHIBIT

HEARING CONSERVATION PROGRAMS

Major Objectives

- To conserve hearing and prevent hearing loss among industrial workers
- To prevent economic loss to employers as a result of hearing loss claims
- To gather scientific information and data in order to facilitate the accomplishment of the foregoing objectives

Procedures

1] Noise level studies

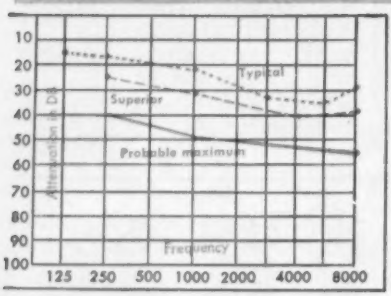
2] Preemployment examinations
Medical and industrial history
Audiometric tests
Otologic examination
Job placement

3] Periodic recheck

4] Reduction of sound intensity
Treatment of sound source
Acoustic treatment of working area
Ear protection for workers

Studies on ear plugs

D. E. Wheeler, Ph.D.



Results of preemployment audiometric tests

	Group 1	Group 2	Group 3	Group 4
Dr. Fox's Series	466	203	82	65
816 cases	(57%)	(25%)	(10%)	(8%)
Dr. Wheeler's Series	1,900	310	139	248
2,597 cases	(73%)	(12%)	(5%)	(10%)
Dr. Whitaker's Series	2,552	554	241	140
3,487 cases	(73%)	(16%)	(7%)	(4%)

Dr. D. E. Wheeler's classification used:

- GROUP 1: Normal audiometric limits
- GROUP 2: Moderate audiometric loss
- GROUP 3: Severe audiometric loss
- GROUP 4: Binaural audiometric asymmetry

Pathologies observed in Dr. Fox's series of 816 cases

- OTITIS MEDIA
  - Perforatory 12
  - Secretory and adhesive 10
  - Total 22
- Total unilateral deafness 5

Symposium on Neonatal Death

PRESENTED BEFORE THE GENERAL ASSEMBLY, 113TH ANNUAL MEETING, ILLINOIS STATE MEDICAL SOCIETY, 1953, CHICAGO*

Intrauterine Complications

FREDERICK H. FALLS, M.D.
University of Illinois, Chicago

OBSTETRICIANS can prevent many fetal and neonatal deaths by wise management of premature labor, breech presentation, and other complications of pregnancy and birth.

With *cephalopelvic disproportion,* roentgen measurements are helpful. The obstetrician must decide if the baby should be delivered by cesarean section, since strong contractions necessary for spontaneous delivery may cause anoxemia.

Conditions producing *premature labor* should be eliminated in subsequent pregnancies. If no preventable cause can be found, viable infants may be saved by cesarean section before the critical period.

Breech presentation predisposes to prolapse and compression of the cord, allowing only a few minutes to rescue the child. Oxygen, instruments to dilate and to incise the cervix, and other emergency equipment must be readily available.

Treatment of *placenta previa* depends on circumstances. With the marginal type and only slight separation, membranes should be ruptured to enable spontaneous delivery. If the head comes down and fetal heart beats accelerate dangerously or stop, the cord is compressed. The head must be held off the cord until the baby is delivered surgically.

Central placenta previa is usually evident about the seventh month. Choice must be made between premature birth, which may end the baby's life, and continued pregnancy, with possible maternal hemorrhage fatal to both mother and child. If birth is postponed, facilities must be at hand to stop any further bleeding. Braxton Hicks' contractions are quieted by bed rest and 3 cc. of lutein solution three times daily.

When a Voorhees' bag or Braxton Hicks' version is used to stop hemorrhage, the cord may be compressed. If roentgenograms show an encephalic monster, delivery should be made through the lower segment.

Complete, premature detachment of the placenta usually causes death of the fetus within a few minutes. Since uterine muscles become distended with blood and atony results, the dead infant should be delivered by abdominal incision. If necessary, the uterus is also removed in order to prevent uncontrollable postpartum hemorrhage.

If placenta previa occurs during labor near term and the cervix is incompletely dilated, the dilation is

*Neonatal death—its prevention. Illinois M. J. 105:239-252, 1954.

completed by hand, version and extraction are done, and the placenta is withdrawn manually if necessary. Oxygen supply, tracheal catheters, and stimulants are assembled during delivery to combat neonatal anoxemia.

Fatal hemorrhage is rarely caused by *villamentous insertion of the cord* and may be misinterpreted as maternal bleeding. The placenta is sometimes located above the internal os, and the cord passes into membranes over the outlet. If membranes rupture early during labor and tear the vessels and fetal heart tones become rapid or weak, the child is removed from above or below, depending on whether the cervix is closed or dilated.

Threatened rupture of the uterus produces fetal asphyxia. When the head cannot enter the pelvic inlet, tetanic contractions of the uterus reduce the oxygen supply of the fetus and sometimes cause cerebral hemorrhage. If Bandl's ring or other signs point to rupture of the uterus, deep anesthesia should be given and cesarean section done before tissues tear and hypoxia produces irreversible changes.

Twin births are often associated with toxemia, premature birth, early detachment of the placenta, or prolapse of the cord. A less common danger is locking of heads when one child presents by breech. The first baby should be decapitated and the trunk removed. The head is extracted only after the other infant is delivered by version and extraction.

Eclamptogenic toxemia with vascular lesions and infarcts of the placenta may cause severe fetal anoxemia, malnutrition, or deformity. Cesarean section may be necessary.

A *fibroid uterus* has weak musculature that often results in malpresentation, oxygen deficit, and prematurity. Operative intervention or other measures may be required.

Analgesics and Anesthetics

PAUL W. SEARLES, M.D.
St. Luke's Hospital, Chicago

INFANT deaths during or soon after birth result chiefly from respiratory impairment in the form of asphyxia, atelectasis, congenital pneumonia, or prematurity.

Modern analgesic and anesthetic agents depress the respiratory center. Even if the mother is not harmed, the child is imperiled when deep anesthesia is maintained for any length of time. Profound anesthesia may also cause fetal anoxemia by temporary paralysis of uterine muscle.

For *analgesia,* morphine should be restricted to a single small dose given near the end of the second stage. Demerol is equally depressing but may be administered closer to delivery without producing excessive depression.

Scopolamine is best employed immediately before delivery. Twilight sleep, induced by combination of the drug with morphine, causes restlessness and should not be used with primary uterine inertia.

Barbiturates are sedative and hypnotic but have little analgesic effect. Excessive dosage interferes

with maternal and fetal breathing.

The value of paraldehyde is questionable since depression is severe.

For *anesthesia,* chloroform is the most powerful inhalant. The baby is not injured but maternal death may result from respiratory arrest, heart failure, or necrosis of the liver. The agent should not be used if dehydration, eclampsia, pernicious vomiting, or cardiac arrhythmia exists. Complications may be avoided by slow induction with oxygen.

Ethyl ether is a good relaxant with a wide safety margin for the mother, although injury to metabolism, renal function, and respiratory epithelium may result. Divinyl ether is most useful for analgesia at the end of a short, uncomplicated second stage. Induction is pleasant and rapid, but prolonged administration may damage the liver.

Adequate oxygen concentrations should always accompany nitrous oxide anesthesia. A light plane must be maintained to avert irreparable lesions to the brain. If relaxation is desired, another agent must be added. Nitrous oxide should not be used in high altitudes or when the patient has severe anemia.

Trichloroethylene does not injure the fetus and may prove extremely useful in obstetrics. Inhalers are employed rather than masks since volatility is low. The drug is analgesic when used alone but provides light surgical anesthesia with nitrous oxide and oxygen. Excessive amounts may cause vagal overactivity of the heart.

Since cyclopropane induces fetal anoxia, the agent should be administered only for short periods during terminal labor and for perineal repair.

Caudal or other methods of spinal anesthesia often reduce maternal blood pressure and cause intrauterine asphyxia. The higher the block, the greater is the fall. Even low saddle technic should be used only by thoroughly trained anesthetists. Local infiltration anesthesia is extremely safe.

Ethylene has an unpleasant odor and explosive properties. Ethyl chloride should not be used because of potency and pronounced depressant effect.

Aspiration of foreign material is especially likely with general anesthesia. Suitable premedication and assurance of an empty stomach decrease risks.

Treatment of asphyxia in the newborn should not include ordinary artificial respiration or stimulating drugs. Gentle suction is provided with an intratracheal catheter or bronchoscope. Intermittent, low positive pressure is applied to establish breathing. Oxygen is administered until resuscitation is complete.

Factors in Infant Care

HEYWORTH N. SANFORD, M.D.
University of Illinois, Chicago

MORE than half of all neonatal deaths result from abnormal pulmonary ventilation. Other factors, in order of frequency, are birth injury, deformity, infection, blood dyscrasia, anoxia, and miscellaneous causes.

Impaired ventilation is usually

due to atelectasis or pulmonary hyaline membrane.

Administration of oxygen is the only possible therapy when atelectasis is caused by brain or peripheral nerve lesions. When the disease originates in the lungs, treatment depends upon whether the damage is confined or scattered.

If a large bronchus is plugged and only 1 or 2 lobes are affected, the child is cyanotic almost at birth. Fluoroscopic or roentgenographic examination of the lungs should be made. A small, infant bronchoscope may be inserted and the main bronchi drained. When the entire lung is atelectatic, oxygen or mechanical stimulation should be attempted, though not entirely satisfactory.

A pulmonary hyaline membrane may develop in premature or full-term infants after anoxia. Air is necessary for formation of the substance which seems to be protein material, perhaps amniotic fluid or secretions from large bronchi. The baby seems healthy at birth, but in about two hours dyspnea, labored breathing, and cyanosis occur. If the child survives the first five or six hours, recovery usually occurs.

Oxygen in a humid atmosphere with a detergent should be given to dissolve obstructive secretions. Alevaire in solution of glycerin and sodium bicarbonate is siphoned into the nebulizer.

Children born by cesarean section do not breathe well because of excessive fluids. The brain and other tissues are edematous, and gastric liquids may be aspirated. The stomach is washed out after birth and oxygen given for a day or two.

Cerebral hemorrhage is apparently due to pathologic conditions rather than to faulty obstetric technic. Symptoms are convulsions, cyanosis, and flaccidity with subsequent spasticity. Rest with oxygen apparently is the best method of treatment.

The most common deformities involve the nervous, cardiac, and gastrointestinal systems. Nerve lesions are easily diagnosed and are referred to neurologic surgeons.

Of cardiac disorders, 3 in particular should be watched for, since treatment cannot be delayed.

With *double aorta*, 2 vessels encircle the esophagus. The child has a brassy cough almost from the first day, difficulty in swallowing, and cyanotic spells. The smaller branch should be ligated.

If *tricuspid atresia* occurs with intraventricular septal defect and open ductus, the baby is born cyanotic with a systolic murmur. Lateral roentgenograms show posterior cardiac enlargement, and electrocardiograms reveal left axis deviation. Stenosis must be eliminated promptly because closure of the ductus is fatal.

Infantile *aortic coarctation* is difficult to diagnose unless associated with cyanosis. Femoral pulsations are usually not felt and blood pressure of the upper and lower extremities differs. Operation should be done before the ductus is closed.

Gastrointestinal obstruction causes vomiting and absence or change of color of the stools. Distention occurs when the child cannot pass meconium. A plain film of the abdomen made within eighteen hours

after birth shows distention of the bowel above the obstruction. Surgery may be done in the first twenty-four hours of life.

Abnormal pulmonary ventilation, birth injury, and malformation account for 85% of neonatal deaths. Infection, responsible for about 6%, is shown by failure to gain weight, temperature above 101° F., or jaundice. Blood disturbances cause 2 or 3% of deaths. Since hemorrhage in the newborn is nearly always caused by infection rather than prothrombin deficiency, antibiotics are more effective than vitamin K.

Pathology of Neonatal Death

JOSEPH D. BOGGS, M.D.
Children's Memorial Hospital, Chicago

ANOXIA is the most frequent cause of death before, during, or shortly after birth of a child.

Major factors are: [1] oxygen deficit in the placental circulation; [2] sensitivity alteration of the baby's respiratory center, as by morphine; [3] reduction of oxygen-bearing blood to the infant; and [4] decreased exchange of carbon dioxide and oxygen in the child's lungs.

Since cells react to anoxia in different ways, serum *p*H, electrolytes, and other values may not accurately reflect conditions in a particular organ.

The organism of a newborn infant is immature; therefore slight pathologic changes may be more important than in later life. Abrupt oxygen deprivation, fatal to the child, may not leave a visible abnormality post mortem. However, prolonged maternal anoxia with shock and rise in blood pressure may induce severe edema and congestion in all of the baby's organs. Since uterine contractions after premature separation of the placenta force large quantities of blood into the infant's circulation, petechial hemorrhagic areas and severe visceral congestion are frequently observed.

The congenital cardiac anomalies causing early death include pulmonary atresia, bilocular heart, aortic atresia, and transposition of the great vessels without ventricular septal defect.

After cesarean section, postmortem examination often reveals large quantities of aspirated fluid or hyaline membrane in the lungs. Anoxia also results from blood loss, since the baby may be deprived of 100 cc. of blood usually expressed into fetal circulation by uterine contraction.

Intracranial hemorrhage is not uncommon. Force applied to the head suddenly or unequally may tear the tentorium cerebelli, and subsequent blood loss from the inferior sagittal or lateral sinus may fatally compress the cerebellum. Although rare, birth trauma sometimes ruptures abdominal viscera and causes death.

Tracheoesophageal fistula and related anomalies must be repaired promptly. If a proximal blind pouch of esophagus joins the trachea, feedings are aspirated; a distal segment channels intestinal contents to the lungs.

Injuries of the Spinal Cord

L. W. FREEMAN, M.D.
Indiana University, Indianapolis

*Restoration of function is more desirable than rehabilitation for patients with injuries of the spinal cord, and early surgery offers the best method of attaining this goal.**

In the past, the high mortality and infrequent functional restoration resulting from surgery led to nonoperative treatment or delayed surgery for injuries of the spinal cord. However, recent experience favors emergency operative intervention in most cases.

Since most spinal cord injuries are complicated by many factors and only crude neurologic evaluations can be made, a functional classification is most logical; gross and microscopic findings are of secondary importance. Categories include [1] concussion, [2] contusion, [3] laceration, and [4] complete severance of the cord.

Concussion describes an injury which causes a momentary, rapidly disappearing disturbance of function with no permanent detectable neurologic signs. Grossly, no changes are observable except perhaps some engorgement of blood vessels. Some vaguely defined cellular changes are seen microscopically in the gray matter but none in the white matter.

Contusion includes injuries which exceed concussion because of small ruptured vessels within the substance of the cord. A residual neurologic deficit, ranging from scarcely detectable motor signs to complete loss of cortical connections, always results. Early surgical intervention is of most value with this type of injury.

Laceration involves actual incision of the pia mater and the underlying spinal cord. Permanent changes always result and range from scarcely detectable alterations to partial lesions to complete loss of function. Pathways in the white matter and cells in the gray matter are destroyed, and hemorrhage is seen microscopically.

Complete severance of the cord, with actual anatomic destruction of continuity, rarely occurs; some tissue usually remains between the ends.

Anatomic diagnosis frequently depends upon the findings at surgery. Diagnosis based on roentgenograms alone may be misleading; soft tissue encroachment on the cord is not visualized, and films that show small pieces of bone impinging on the cord are difficult to obtain.

Operation should be performed as soon after injury as possible, preferably within the first twenty minutes. The possibility of further circulatory embarrassment is lessened and pressure is relieved so

*Injuries of the spinal cord. Surg. Clin. North America 34:1131-1146, 1954.

that circulation can be restored. Surgical drainage of damaging collections of extravasated blood is of great importance. Other essentials of early care are:

1] Support of the spine to prevent rotation or flexion which may sever the cord

2] Emergency laminectomy, if possible, or reduction of the deformity by traction, hyperextension, or both

3] Rotation of the patient at least every two hours

4] Emptying of the patient's bladder by catheter, and early institution of tidal drainage

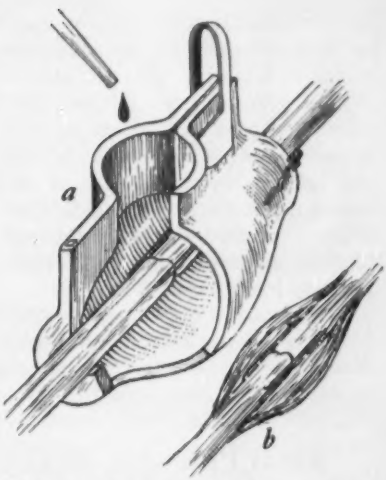
5] Maintenance of a high-protein diet, with supplements of protein-rich liquid and whole blood as required

6] Avoidance of intestinal distention, with daily enemas

7] Anticipation of and assistance for complicating emotional reactions.

Treatment should consider the major injury—that of the neural tissue. Manipulation should never be done, and traction is used only for support.

Because the tip of the conus medullaris reaches to the first or second lumbar vertebra, *lower lumbar spinal injuries* are actually injuries of the spinal nerve roots. For closed injuries, operation and debridement are accepted treatment. The dura mater should be opened and cleansed of foreign material. Severed nerve roots are sutured by the plasma clot technic (see illustration), using grafts if necessary. If hemostasis is good, the dura should be closed.



With the plasma clot technic [a], severed nerve ends are inserted in a latex mold and aligned and coapted on wire supporting rails; tantalum wire sutures may be necessary when the nerve is under tension. About 30 drops of plasma are inserted in the mold with an eyedropper. The formed clot [b] after removal of the mold.

With *dorsal* and *dorsolumbar spinal injuries,* movement of the fracture site should be avoided. Muscle stripping is safest by sharp dissection. Laminae should be removed gently, and extruded disk material is removed extradurally unless the fragments have torn through the dura.

Gross pial tears, obvious contusions, or dilated veins on the posterior surface of the cord indicate that the spine is not normal. Necrotic material and blood should be irrigated from the interior of the cord through an incision in the mid-dorsal aspect. A blunt probe passed almost through the cord and drawn longitudinally for the length of pial

incision usually traverses any areas of hematomyelia or necrosis and serves as a lateral relief for edema.

With *cervical spine injuries,* skull traction should be applied at once, at the bedside if necessary. A turning frame device used as a bed supports the traction. Surgical mortality is greatly increased by manipulation in association with intratracheal intubation.

Muscle stripping should be done by sharp dissection. Laminar fractures are frequently found, and care should be taken not to push loose bone into the cord. Areas that might contain blood or necrotic material should be explored with a 27-gauge needle. Myelotomy is done medially or laterally, depending upon the area of greatest injury.

Traction is maintained at least six weeks. Some method of support in extension should be maintained for six months or until bony healing is apparent. Bone grafting is done later as a secondary procedure.

Spinal Puncture Headache

URBAN H. EVERSOLE, M.D., AND WILFRID J. ROKOWSKI, M.D., LAHEY CLINIC, BOSTON, report that the usual cause of postlumbar puncture headache is the reduction of cerebrospinal pressure when spinal fluid leaks through the hole made in the dura by a spinal puncture needle. A greater differential between the cerebrospinal fluid pressure and the intracranial venous pressure is produced, bringing about dilatation of the venous structures and some increase in brain volume because of venous dilation and edema.

The headache may occur in a few hours or after several days and may be slight but is frequently deep and dull. Pain may be referred to any cranial region but is usually frontal. The ache is intensified by shaking the head or by jugular compression or when the patient is standing.

Patients overly sensitive to pain or with previous severe headache should not be given spinal anesthesia. When necessary, single injection of spinal anesthesia should be used, but not the continuous method. Headache occurs less often when a special needle resembling the point of a pencil is used or if the ordinary spinal needle is held with the bevel parallel to the long axis of the body. Injection of 10 to 20 cc. of physiologic saline solution into the epidural space immediately after anesthesia may prevent headache.

Spinal puncture headaches are usually relieved by placing the patient in a horizontal position or by injecting physiologic saline into the subarachnoid or epidural space. Intravenous injection of hypotonic solution may be of benefit, but hypertonic solutions should not be used.

Spinal puncture headache. California Med. 81:59-64, 1954.

Diagnosis of Chronic Stridor in Infancy

DANIEL C. BAKER, JR., M.D.
Columbia University, New York City

*A tracheobronchographic examination is a simple and valuable procedure for diagnosis of chronic stridor among children.**

CONGENITAL laryngeal stridor, a benign and self-limiting disorder, is the most common cause of noisy breathing at birth or shortly after. The diagnosis can usually be established by inspection of the nose, mouth, pharynx, and larynx.

Direct laryngoscopic examination is the most useful procedure. Laryngeal cysts, webs, neoplasm, foreign bodies, and stenosis must be distinguished. Choanal atresia, micrognathia, macroglossia, and postnasal drip should also be considered.

If a lesion or anomaly is not evident above the vocal cord, further studies are required. Chronic stridor may be a symptom of a congenital anomaly of the aorta or branches of the vessel. A vascular ring may constrict the trachea or large bronchi and produce noisy breathing with episodes of dyspnea, cyanosis, and dysphagia brought on or accentuated by feeding. Success of surgical therapy for such anomalies depends upon early diagnosis.

Tracheobronchographic examination is advisable when a constricting vascular ring is suspected. The procedure is less dangerous than bronchoscopic study and usually yields more information. Complications of the test are relatively uncommon.

Tracheobronchography can be performed immediately after laryngoscopic examination. The infant is placed on a roentgen table with arms extended along the sides of the head. Arms and legs are restrained with elastic cotton sleeves, but no anesthesia is used.

A laryngeal cannula is introduced into the trachea through the vocal cords, and 3 to 5 cc. of warm iodized oil is quickly instilled into the trachea. The distal end of the cannula is atraumatic, and rubber tubing and an adapter for a Luer-Lok syringe are attached to the proximal end. The laryngoscope and cannula are withdrawn, and roentgenograms are made in the anteroposterior and lateral projections.

The outline of the trachea and large bronchi is usually excellent. Any constriction or compression is easily recognized. If oil in the tracheobronchial tree is not sufficient, more is instilled and additional films made.

Stridor and respiratory obstruction are often attributed to an enlarged thymus when the roentgen-ray film shows a broad shadow in the upper mediastinum. The possibility of congenital anomaly of the aorta must be considered.

*Congenital laryngeal stridor. Arch. Otolaryng. 60:172-185, 1954.

Intracardiac Surgery During Hypothermia

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Prepared for Modern Medicine

HYPOTHERMIA makes intracardiac surgery under direct vision possible by a relatively simple technic. After the superior and inferior vena cava have been occluded, the heart empties itself and may be opened widely. This method of intracardiac surgery is not practical at normal body temperatures because an adequate period of inflow occlusion would lead to nervous system damage.

At low temperatures, the oxygen requirements of the body are reduced and the nervous system is much less sensitive to temporary ischemia. The circulation may be interrupted and the heart opened for five to ten minutes at relatively safe levels of hypothermia, 79 to 82° F. Thus enough time is provided to repair some intracardiac defects under direct vision.

The system is particularly suitable for the repair of atrial septal defects (see illustrations).

The anesthetized patient is cooled with refrigerating blankets through which 50% alcohol at 25° F. is pumped. When body temperature falls to 84° F., the operation is started. The chest is opened through an anterior incision with transverse division of the sternum at the level of the fourth interspaces and entry into both pleural cavities. After the wound has been opened widely, the azygos vein is ligated and the superior and inferior vena cavae are isolated and surrounded with loops of heavy silk. Before the circulation is stopped by pulling on these loops, however, the interior of the heart is explored by inserting a finger into the dilated right atrium. After closure of the exploratory wound, stitches are placed in the right atrial wall, and then, when all preparations have been completed, the loops of silk are pulled taut, occluding the entire cardiac inflow. After a few beats to evacuate the heart, the aorta is clamped and the right atrium is opened widely.

The atrial septal defect is closed with silk sutures, the wound in the atrial wall is closed with a clamp, and the circulation is allowed to resume. The atrial wound is repaired over the clamp with a continuous silk suture.

At completion of operation, the patient's temperature will be about 82° F. The patient is rewarmed in a water bath kept at 114° F. and he reawakens promptly when his body temperature nears normal.

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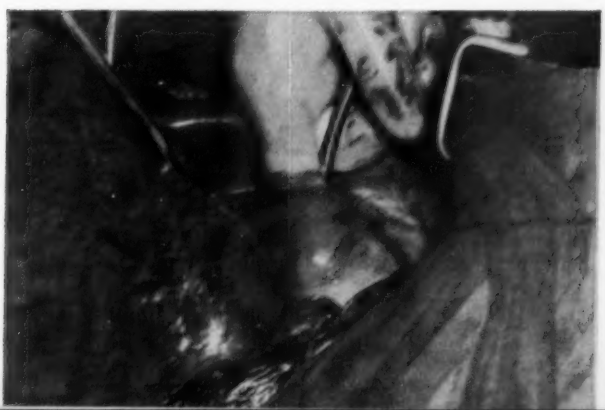
CLINICOLOR SECTION

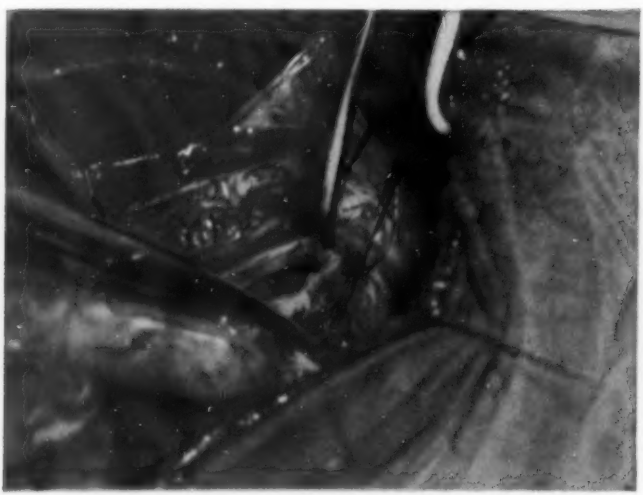
Atrial Septal Repair Under Hypothermia

The anesthetized patient is placed between refrigerating blankets through which 50% alcohol at 25° F. is pumped. When body temperature falls to 84° F., the operation is started.

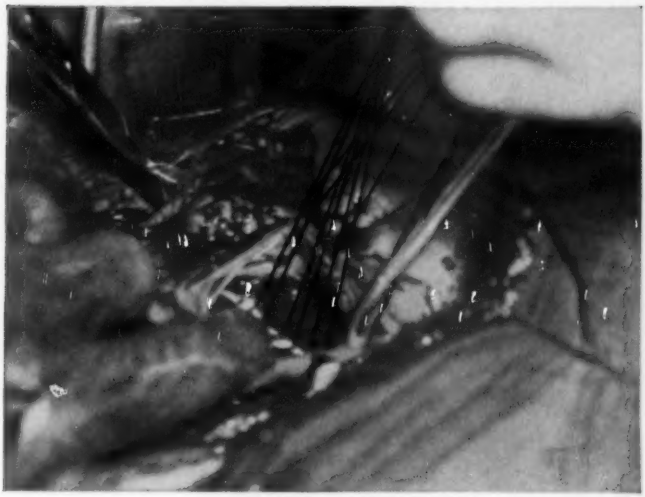
First a finger is inserted into the dilated right atrium to explore the interior of the heart. Then the exploratory wound is closed.



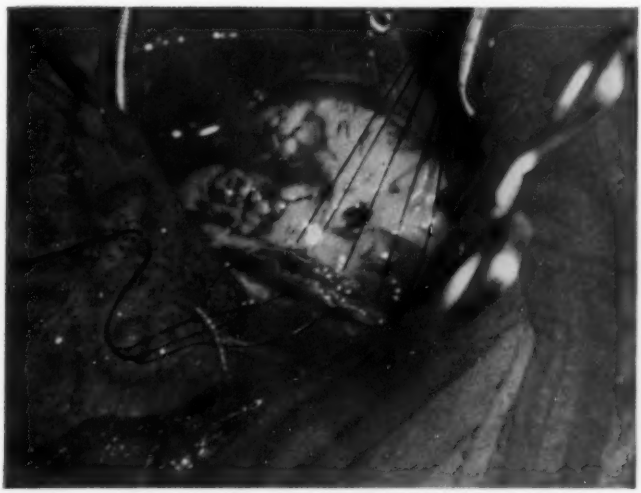
Stitches are placed in the right atrial wall just before the cardiac inflow is occluded and the heart is opened.



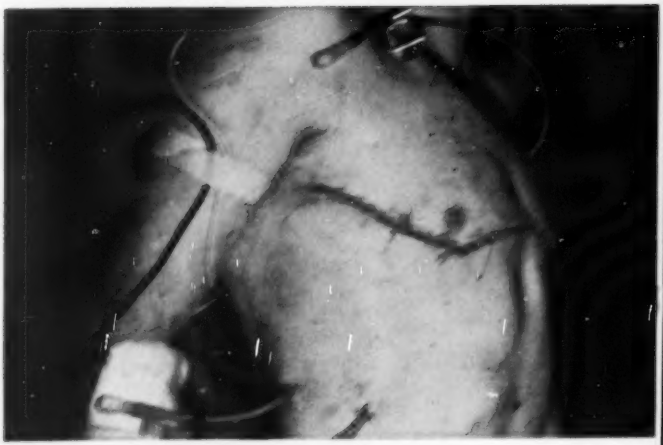
As remaining blood is evacuated from the interior of the heart, the right atrium is opened with scissors.



The atrial septal defect is repaired with silk sutures, which, in this view, are held taut just before they are cut.



The wound in the atrial wall is closed with a clamp, and the circulation is allowed to resume.



▲

The circulation was interrupted for five minutes. The photograph shows the chest wound at the end of the operation. At this point the patient's body temperature was 82° F.

◀

The patient is rewarmed in a bath of hot water kept at 114° F. When his body temperature approaches normal he will awaken promptly.

Photographs by Lloyd Wolf, University of Minnesota.

CLINICOLOR SECTION

Diagnosis of Congenital Megacolon

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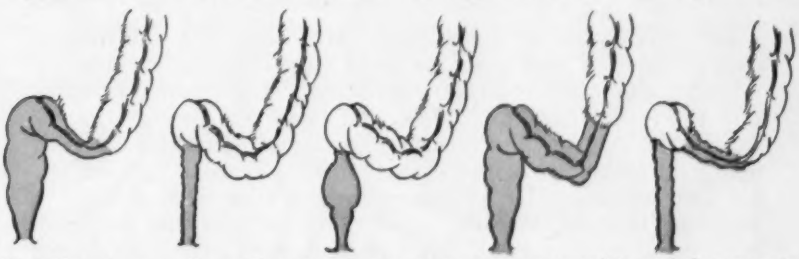
*Roentgenographic examination with a barium enema is essential for accurate diagnosis of megacolon.**

Lack of ganglion cells in the myenteric plexus of a narrowed segment of bowel produces congenital megacolon, Hirschsprung's disease. The condition is distinguished from organic megacolon, caused by an obstructing process that can be demonstrated grossly, and idiopathic disease, which has no definite etiologic basis but is due to faulty bowel habits, spastic sphincter, and an usually elongated sigmoid.

With congenital megacolon, the length of the narrowed segment varies from 2 to 25 cm. Low rectal segments are the shortest and sigmoid portions the longest. Approximately 90% of patients have short segments, and the lesion is most commonly in the rectosigmoid area. The spastic section usually represents only part of the aganglionic area since the rectum is often also devoid of ganglion cells. When the segment is long, the aganglionic area usually extends from the splenic flexure to the anus.

The disturbance in defecation with Hirschsprung's disease is due not only to obstruction by the narrowed segment but also to loss of normal reflex. Propulsive action of the hypertrophied bowel proximal to the obstruction moves feces past the area of narrowing. Uncoordinated rectal contractions prevent normal evacuation. Voluntary relaxation of the external sphincter and vigorous contractions of the hypertrophied bowel expel the feces.

Constipation, progressive abdominal distention, and vomiting usually begin at birth or during the first



Variations in aganglia and contraction seen on roentgenographic and fluoroscopic examinations. Colored area is extent of aganglia.

*Congenital megacolon (Hirschsprung's disease). Radiology 63:157-175, 1954.

few weeks of life. In newborn infants, vomiting occurs first and then passage of meconium stools is delayed. However, symptoms are not always well defined.

When the disease is advanced, abdominal enlargement is produced by the dilated colon, and fecal masses may be palpated through the abdominal wall. The rectum is usually free of feces. The patient appears malnourished, and hypochromic anemia may be associated.

Roentgenographic diagnosis is made by demonstrating a narrowed segment of colon and pronounced dilatation proximal to the narrowed area. A small-caliber catheter is inserted just beyond the anal sphincter, and the patient is placed in the left lateral decubitus position. Slow introduction of barium is guided by fluoroscopic observation.

The patient is turned to various positions for the best visualization of the sigmoid colon. Spot films are made during the filling.

Barium is allowed to enter the dilated bowel for only a short distance to demonstrate the change from small to large caliber. If a narrow segment is noted, the colon is not filled completely since barium impaction or water intoxication may result. Preparation of the barium suspension with normal saline helps prevent water intoxication. If a lesion is not demonstrated in the rectosigmoid, the remainder of the colon is examined.

Postevacuation films with the patient in the left lateral decubitus or left posterior oblique position may demonstrate the segment. A double-contrast study may be of value.

Approximately 10% of mortalities occur during the neonatal period. Most of the early deaths occur when the aganglionic segments are long, but the disease may also be fulminating and rapidly fatal with short segments. The prognosis is better if the patient lives for the first few years, and conservative therapy for constipation is adequate. Death in childhood is due to intestinal obstruction, electrolyte imbalance, and shock and water intoxication after enemas.

Treatment consists of removing the aganglionic segment. With a pull-through technic, continuity of the bowel is restored and the anal sphincter is preserved.

¶ ADVANCED ORAL CANCER is better controlled with massive roentgen therapy than with the usual 6,000-r dosage for tumors. With doses of 9,000 to 10,000 r delivered during a period of about four weeks, George White, M.D., and James Sieniewicz, M.D., of Boston and William R. Christensen, M.D., of Salt Lake City find that good effects are achieved and radiation sequelae are not significantly increased. Of 83 patients treated with massive doses at Pondville Hospital, Walpole, Mass., 23 were alive and well after three years, compared with only 1 of 54 subjects given conventional amounts of roentgen rays.

Radiology 63:37-42, 1954.

Simulation of Mitral Stenosis

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*Widespread use of commissurotomy has increased the need for accurate diagnosis of mitral stenosis.**

CARDIAC lesions simulating rheumatic mitral stenosis must be differentiated when patients are selected for surgical therapy. Cyanosis, dyspnea, polycythemia, and right ventricular hypertrophy occur with all obstructions of the pulmonary circulation. Apical middiastolic and presystolic murmurs, accentuated first sound, and loud pulmonic second sound are not always noted with mitral stenosis and are sometimes heard with other diseases.

Disease of the mitral valve can usually be easily differentiated from simulative lesions. Cardiac catheterization or kymographic, angiocardiographic, or ballistocardiographic examination is sometimes required. Exploratory cardiotomy should be done when the diagnosis is doubtful, or operable lesions will be overlooked. Facilities should be available so that the necessary procedure may be performed immediately.

Intracardiac tumors, particularly myxomas of the left atrium, may produce the same physiologic alterations and auscultatory signs as mitral stenosis. A tumor may be evident on an angiocardiogram and is suggested by the following factors:

- No previous rheumatic fever
- Variable murmur
- Rapidly progressive decompensation
- Poor response to digitalis
- Episodic severe dyspnea and precordial pain.

Collagenous mediastinal thickening obstructs the pulmonary venous return to the left atrium. Collagenosis or constrictive pericarditis can usually be distinguished from mitral disease by cardiac catheterization and kymographic study.

Apical diastolic murmurs are heard with many congenital heart diseases, including patent ductus arteriosus, pulmonary stenosis, Eisenmenger's complex, ventricular septal defects, and coarctation of the aorta. Atrial septal defects may be associated with a mitral murmur and mistaken for Lutembacher's syndrome.

Left ventricular dilatation due to rheumatic carditis, hypertension, or anemia may produce diastolic murmurs. Sickle-cell anemia is especially likely to mimic mitral stenosis because previous polyarthralgia is common. The left ventricle is not enlarged with mitral stenosis.

Any disorder of the lesser circulation may produce alterations analogous to changes with disease of

*Mitral stenosis in facsimile. New England J. Med. 251:297-302, 1954.

the mitral valve. The murmur with aortic insufficiency is sometimes transmitted to the apex.

Alteration of the first apical sound of a healthy person may be misinterpreted as a sign of mitral disease. Phonocardiographic studies should be made if only a short, faint presystolic murmur is heard.

Mitral P waves on the electrocardiogram and valvular calcification are helpful diagnostic signs when mitral stenosis occurs without a murmur.

¶ POLYARTERITIS may be simulated by a syndrome resulting from prolonged treatment with large doses of hydralazine hydrochloride (Apresoline). After more than a year of effectively treating a patient with malignant hypertension, Isidore Feder, M.D., of New York Polyclinic Hospital, Brooklyn, reports that manifestations of multiple arterial inflammation developed from use of the drug. Fever and other symptoms subsided when ACTH and cortisone were administered.

New England J. Med. 251:273-274, 1954.

¶ BACITRACIN NEPHROPATHY may result in acute renal failure and death. Because of progressive uremia and oliguria occurring immediately after administration of the drug to a subject with normally functioning kidneys, Gabriel Genkins, M.D., Jonathan W. Uhr, M.D., and Morton S. Bryer, M.D., of Mount Sinai Hospital, New York City, ascribe the fatal nephrosis to the medicament, the contained *d*-amino acids, or both. Microscopically similar renal lesions were found in the patient and experimental animals.

J.A.M.A. 155:894-897, 1954.

¶ FEVER WITH INFECTION is often of diagnostic and prognostic value and may be a useful sign in evaluating the efficacy of treatment. Since aspirin is usually given for analgesic rather than antipyretic effect, Ivan L. Bennett, Jr., M.D., of Yale University, New Haven, Conn., substitutes codeine or Demerol for alleviation of discomfort, thus retaining the elevation of temperature as a guide to specific therapy. Defervescence is best achieved by mechanical means or by sponging the extremities with tepid water; a liter of water vaporized from the skin extracts 585 calories. Alcohol evaporates rapidly but withdraws few calories; ice packs or cold sponges may actually cause a rise in temperature. Fever with exanthem subitum or mumps orchitis is resistant to aspirin but usually subsides with cortisone.

Yale J. Biol. & Med. 26:491-504, 1954.

Thrombotic Thrombocytopenic Purpura

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*Whenever hemolytic anemia is associated with thrombocytopenic purpura, a diagnosis of thrombotic purpura frequently should be considered.**

THE 4 main features of thrombotic thrombocytopenic purpura include: [1] fever, [2] hemolytic anemia, [3] thrombocytopenic purpura, and [4] terminal neurologic signs. The presenting symptoms are fatigue, anorexia, frontal headaches, bleeding, jaundice, nausea, and vomiting. Fever and petechial hemorrhages are also noted. Hepatitis may be suspected, but hepatosplenomegaly and adenopathy are not found. Subsequently, irregular hyperpyrexia up to 105° F. may occur with abdominal pain, fresh crops of petechiae, and deepening jaundice.

Neurologic changes such as transient paresis, paresthesias, hypotonia, and reflex toe reactions appear late. Hemiplegia and coma may supervene.

Blood studies show normocytic, normochromic anemia with pronounced reticulocytosis. Red cell fragility is normal. The direct Coombs test is negative. Hyperbilirubinemia may occur and a positive van den Bergh reaction may be obtained. Cold agglutinins will not be observed and blood cultures will be sterile. White and differential blood counts remain unchanged.

A platelet deficiency is usually found with an elevated bleeding time. Although clotting and prothrombin times are not altered, clot retraction is deficient. The sternal marrow usually shows reactive normoblastic hyperplasia.

Bilirubin without an excess of urobilin is noted in the urine. Microscopically, red cells and epithelial casts are found. Cultures are sterile.

Biopsy has an obvious place in diagnosis, even though hemorrhagic tendencies will limit the procedure. However, skin and muscle biopsies may demonstrate widespread hyaline thromboses composed of masses of agglutinated platelets in capillaries and in terminal arterioles. Lesions may also be detected in paraffin sections of aspirated bone marrow.

A satisfactory treatment is unknown. Repeated blood transfusions may aid temporarily, only to be followed by exacerbation of the condition. Splenectomy has been recommended, but the procedure

*Thrombotic thrombocytopenic purpura. Brit. M. J. 4888:612-613, 1954.

may be a complete failure. ACTH, cortisone, and the antibiotics have not proved of value after extensive trials.

Microscopic findings from autopsy specimens show thrombotic changes chiefly in the smaller vessels of the renal cortex. The renal tubules are atrophied with ischemic fibrosis. Most thrombi are organized with invasion by spindle cells and formation of reticulin fibrils in the most recent lesions. Older lesions show collagenous scarring.

This disease resembles disseminated lupus erythematosus and may possibly be related to this condition.

Pulmonary Edema and Pneumonia

EUGENE D. ROBIN, M.D., AND E. DONNALL THOMAS, M.D., PETER BENT BRIGHAM HOSPITAL, BOSTON, note that pulmonary edema and pneumonia frequently coexist and that each condition predisposes to the development of the other. Patients with acute pulmonary edema should receive vigorous prophylactic chemotherapy; a person with pneumonia must be observed closely for signs of edema, and parenteral fluids should be administered cautiously.

Differential diagnosis of pulmonary edema and pneumonia is often impossible. Even when a patient has elevated venous pressure, distended neck veins, wet lung rales, and other signs of pulmonary edema, postmortem examination may reveal predominant pneumonia.

Edema frequently occurs with fever, leukocytosis, and roentgen evidence of the inflammatory lesion. Pneumonic alveolar exudate is sometimes indistinguishable from the transudate of pulmonary edema.

In pathologic physiology, pneumonia and pulmonary edema are closely related. During the early stages of pneumonia, congestion and pulmonary edema occur in the lung tissue adjacent to the infected area. Pneumonia predisposes to pulmonary edema by damaging lung capillaries, reducing oxygenation with consequent anoxia, increasing the rate of fluid entering the alveoli, and decreasing the rate of fluid resorption by the lymphatics. In addition, systemic effects of pneumonia such as anoxia, fever, and intoxication may produce myocardial stress; pulmonary edema is often noted after acute myocardial infarction.

Pulmonary edema fluid is an excellent culture medium for bacteria. Other factors that increase the susceptibility of patients with pulmonary edema to pneumonia include reduced ventilatory efficiency and decreased ability to eliminate secretions.

Some relations between pulmonary edema and pulmonary inflammation (pneumonia). Arch. Int. Med. 93:713-724, 1954.

Bacteremia from Gram-negative Bacilli

JOHN A. SPITTEL, JR., M.D., WILLIAM J. MARTIN, M.D., WILLIAM E. WELLMAN, M.D., AND JOSEPH E. GERACI, M.D.
Mayo Clinic, Rochester, Minn.

Elderly men having genitourinary operations are particularly susceptible to Escherichia coli *invasion of the blood.**

OPERATIVE procedures, diabetes, and debilitating chronic illness such as carcinomatosis apparently predispose to *Escherichia coli* bacteremia. The organisms almost always enter by the urinary or gastrointestinal tract.

Though less culpable than micrococci and streptococci, *E. coli* causes bacteremia more often than other gram-negative bacilli. Onset is generally abrupt and associated with chills, yet fever and malaise may begin gradually. At times, the first manifestation is sudden circulatory collapse.

Temperature is high in all cases and usually spiked, ranging from 101 to 106° F. Fever may be intermittent, remittent, continuous, or variable, and pulse rate is usually in proportion. Sweating and headache are common, delirium and stupor rare.

The patient often has slight anemia, and both white cells and polymorphonuclear neutrophils are generally increased. A soft, systolic precordial murmur, suggestive of endocarditis, may develop and then subside rapidly as temperature falls.

Prostration of some degree always occurs, and anorexia is usually noted. Metastatic abscess may involve the kidneys, liver, or lungs. Vomiting, abdominal distention, and urinary albumin, blood, or pus depend on the underlying disease.

The best therapy utilizes a tetracycline drug and dihydrostreptomycin. Outcome depends largely on the location, extent, and severity of the primary focus. *E. coli* is generally sensitive to streptomycin and almost invariably to tetracycline in laboratory tests. Although proper combined dosage fails in 10% of trials, mortality is far higher with inadequate therapy or none.

Among 41 males and 24 females with *E. coli* bacteremia, more than 75% of the men were 50 years old or more, and 50% of the women were under 50 years. The disparity reflects rate of genitourinary lesions and manipulations in respective age periods of the sexes.

The portals of entry in order of frequency were the male urinary tract, the biliary region, female urinary tract, and other gastrointestinal structures. Female genital tissues were implicated only once. All 8 patients with diabetes mellitus were

*Bacteremia owing to Escherichia coli: a review of 65 cases. Proc. Staff Meet., Mayo Clin. 29:447-458, 1954.

infected by urinary routes. Initial sites were not always determined. Bacteremia occurred after surgery in 40% of the patients.

Operations most frequently involved were transurethral prostatic resection and biliary and gastric procedures. Appendectomy, fulguration of bladder tumor, ureteral catheterization, nephrectomy, ureterostomy, Whipple's resection, colectomy, and hemorrhoidectomy were occasionally responsible.

Bacteremia was considered terminal in 11 of 17 fatal cases. Deaths were associated with hypernephroma, lymphosarcoma, choledocholithiasis, pylephlebitis, pyelonephritis, acute leukemia, necrotizing papillitis, congenital aortic stenosis, peritonitis, and cancer of the pancreas, prostate, bladder, or stomach.

¶ WEIGHT LOSS is apparently unassociated with diminution in blood levels of cholesterol or other phospholipids. Among 24 women fed reducing diets, Norman S. Moore, M.D., Charlotte M. Young, Ph.D., and Leonard A. Maynard, Ph.D., of Cornell University, Ithaca, N.Y., found increases of 0.58 mg. of cholesterol and 0.64 mg. of lipids per pound of weight lost. Wide fluctuation of concentrations occurred in dieting individuals and in normal controls.

Am. J. Med. 17:348-354, 1954.

¶ SENSITIVITY TO SULFASUXIDINE may cause immediate or delayed severe febrile and allergic reactions when the medicament is given preparatory to abdominal surgery. The agent, succinylsulfathiazole, is the least toxic of the sulfonamides, but Alfred A. Pomeranz, M.D., and Paul A. Kirschner, M.D., of Mount Sinai Hospital, New York City, observe that the active principle, sulfathiazole, is the most potent sensitizer of this class of compounds. Previous sulfonamide allergy should be sought before using the substance.

New York J. Med. 54:1903-1907, 1954.

¶ TETRACYCLINE ANALOGUES do not have the therapeutic equivalence suggested by the similarity of molecular structure. While tetracycline induces fewer untoward reactions, Henry Welch, M.D., and associates of the U. S. Food and Drug Administration, Washington, D. C., find that in some diseases the substance is less effective than the analogous compounds. Of 338 strains of staphylococci, 63.6% were sensitive to chlortetracycline, 63% to tetracycline, and only 8.8% to the same concentration of oxytetracycline. Random substitution of the drugs should be avoided.

Antibiotics & Chemother. 4:741-745, 1954.

Chemotherapy of Lymphoblastomas

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University of Utah, Salt Lake City

*Although radiation is usually as effective as recent chemotherapeutic agents in treatment for leukemia, Hodgkin's disease, and related disorders, drug therapy is more convenient and less expensive and eliminates the danger of radiation sickness.**

THE value of nitrogen mustard in chemotherapy of *Hodgkin's disease* has been clearly established. The patients remain asymptomatic for longer periods and hospitalization is shorter than after radiation therapy alone.

The drug should be given to patients in whom the disease is widespread with signs of systemic involvement, such as fever, malaise, and weight loss, and to those who have become resistant to radiation. With widespread disease, peripheral or mediastinal nodes resistant to nitrogen mustard therapy are exposed to local radiation. Early lesions are surgically removed if technically feasible, with subsequent local radiation and nitrogen mustard therapy. Leukopenia in a previously untreated patient does not always mean the drug cannot be administered.

Nitrogen mustard is administered intravenously in a single dose of 0.2 mg. per kilogram of body weight the first day and 0.2 to 0.4 mg. the next day, depending on the total dose previously selected; total dosage usually does not exceed 0.6 mg. Administration of chlorpromazine or heavy barbiturate sedation reduces the severity of nausea and vomiting, which often occur after nitrogen mustard is given. Hemopoietic system depression can be avoided by giving courses of nitrogen mustard no oftener than once in six weeks.

Systemic manifestations are usually promptly relieved after administration of the drug. However, the duration of remission varies greatly, ranging from several weeks to years. Subsequent remissions vary in length and are not necessarily progressively shorter.

Patients with no toxic symptoms can be treated with the slower acting drug TEM (triethylene melamine), which is given orally and causes fewer gastrointestinal tract symptoms than nitrogen mustard. Dosage is 0.05 to 0.4 mg. per kilogram of body weight, with about 5 to 25 mg. in a single course; no more than a total of 5 mg. should be given daily. Because of possible bone marrow depression, the select-

*Chemotherapy of leukemia, Hodgkin's disease and related disorders. Ann. Int. Med. 41:447-464, 1954.

CHEMOTHERAPY OF LEUKEMIA AND RELATED DISORDERS

Disease	*Radiation* P^{32}	*Mustard Congeners*		*Myleran*	*Urethan*	*Folic Acid Antagonists*	*Cortisone ACTH*	*6-MP*
		HN_2	*TEM*					
Hodgkin's disease	++++	++++	+++	0	0	C	±	C
Chronic lymphocytic leukemia	+++	++	+++	0	0	C	±	C
Lymphosarcoma	+++	++	++	0	0	C	±	C
Reticulum-cell sarcoma	++	++	+	0	0	C	0	C
Chronic myelocytic leukemia	+++	+	+	++++	++	C	C	+
Acute leukemia								
lymphoblastic	C	C	C	0	0	++++	++++	++
myeloblastic	C	C	C	0	0	+++	C	++
monocytic	C	C	C	0	0	+	C	+

++++ Effective and preferable
+++ Effective
++ Moderately effective
+ Slightly effective
± Sometimes effective
0 Ineffective
C Contraindicated

ed dose is given over a period of one to three days, with intervals of a month or more between courses. Tolerance of an individual may decrease with repeated courses of therapy.

TEM is best administered with water with the patient in a fasting state. Absorption is facilitated by simultaneous administration of 2 gm. of sodium bicarbonate.

Some patients with *chronic lymphocytic leukemia* are effectively treated with TEM for long periods of time. Doses as small as 2.5 mg. orally may cause significant reduction in the leukocyte count and some decrease in lymphadenopathy. Local radiation should be employed if small doses of TEM do not control lymphadenopathy.

The effects of TEM in treatment of *lymphosarcoma* vary widely; serious hemopoietic depression may develop in some patients.

Nitrogen mustard is of value in some cases of *reticulum-cell sarcoma,* but relief is usually temporary.

Hemolytic anemia complicating Hodgkin's disease or chronic lymphocytic leukemia is best treated with cortisone.

Myleran, a sulfonic acid ester, is the most active chemotherapeutic agent for *chronic myelocytic leukemia.* Oral dosage varies from 2 to 8 mg. daily, the usual dose being 4 to 6 mg. Remission is usually pronounced after three weeks of therapy. The drug is less expensive and easier to administer than radiation, and occasionally, when the disease is refractory to radiation and other therapy, Myleran is effective.

Urethan is not as satisfactory as Myleran and may cause nausea and vomiting; prolonged administration sometimes results in marrow hypoplasia.

Cortisone is administered initially for *acute lymphoblastic leukemia;* after remission is complete, A-meth-

opterin is substituted. Cortisone is usually given in 3 or 4 doses totalling 150 mg. daily, but as much as 300 mg. daily may be administered, if necessary to produce remission. In addition, the patient is fed a low-salt diet and 3 to 6 gm. of potassium chloride is also administered each day.

Although folic acid antagonists such as Aminopterin and A-methopterin sometimes brings about dramatic remissions, toxic effects frequently occur. For example, severe pancytopenia and hemorrhagic necrosis of the alimentary tract epithelium may result. Re-treatment is progressively less effective, and the patient eventually becomes refractory.

Patients who become resistant to folic acid antagonists and cortisone are sometimes benefited by administration of 6-mercaptopurine. However, remissions are usually only partial and temporary.

Intestinal Tuberculosis

ROGER S. MITCHELL, M.D., AND LEONARD J. BRISTOL, M.D., TRUDEAU-SARANAC INSTITUTE, TRUDEAU, N.Y., state that intestinal tuberculosis is no longer the most common complication of pulmonary tuberculosis and can be usually regarded as a minor problem because of satisfactory therapy. During 1924-49, the incidence of intestinal tuberculosis upon admission to Trudeau Sanatorium fell from about 10% to approximately 1%.

Intestinal involvement varies with extent of the pulmonary infection, occurring more frequently with far-advanced disease, and also in young women; girls of 15 to 23 years of age are more prone to intestinal complications than are females over 24.

Symptomatology has little diagnostic value. Most patients have a slight fever, but less than half have night sweats, easy fatigability, nausea, vomiting, or weight loss. Gastrointestinal symptoms such as dyspepsia, cramps, anorexia, constipation, diarrhea, and malaise are even less frequent. Intestinal tuberculosis occasionally coexists with pulmonary tubercular disease when the patient does not have symptoms, cavitation is not revealed by roentgenographic examination, and sputum culture is negative.

Barium motor meal is the best diagnostic method, but probably is not essential since streptomycin, para-aminosalicylic acid, and isoniazid, ordinarily given for pulmonary disease, are very effective against intestinal tuberculosis.

A possible complication of chemotherapy is that, with healing, the resulting scar formation may cause bowel obstruction.

Intestinal tuberculosis: an analysis of 346 cases diagnosed by routine intestinal radiography on 5,529 admissions for pulmonary tuberculosis, 1924-49. Am. J. M. Sc. 227:241-249, 1954.

Surgical Risk with Coronary Disease

B. E. ETSTEN, M.D., D. C. WEAVER, M.D., T. H. LI, M.D., AND J. B. FRIEDMAN, M.D.
New England Center Hospital, Boston

*Risk of operation is only slightly higher for patients with coronary heart disease than for patients without cardiac disorders, provided adequate measures are taken to avoid myocardial ischemia.**

A DEFINITE relationship exists between previous heart disease and postoperative mortality. However, patients with coronary disease are considered good surgical risks if the internist, the surgeon, and particularly the anesthetist cooperate in preventing hypoxia, shock, and circulatory and respiratory depression, all of which may precipitate myocardial infarction.

Hypoxia is frequently caused by an oropharyngeal obstruction and laryngeal spasm during anesthesia. Other causes include decrease in inspired oxygen tension, arterial hypotension, depressed ventilation, and shock. Regardless of the cause, shock often leads to single or multiple fresh coronary occlusions in elderly patients, particularly in those with coronary arteriosclerosis.

Deep surgical anesthesia produces a deleterious effect on either the myocardium or the peripheral circulation. This depression rarely occurs during light levels of anesthesia. Deep anesthesia is accompanied also by depressed ventilation, which impedes excretion of carbon dioxide and leads to respiratory acidosis. Toxic levels of carbon dioxide may ensue and predispose to cardiac arrhythmia and hypotension.

Smooth, rapid anesthetic induction with thiopental sodium, use of a muscle relaxant, and endotracheal intubation will eliminate many factors contributing to reduction of coronary blood flow. Skillful use of muscle relaxants permits maintenance of light levels of anesthesia. When deeper planes are reached accidentally or of necessity, the anesthetist may control respiration by manipulating the anesthesia bag at a definite rate and rhythm. Alveolar ventilation thus is maintained within physiologic ranges, and circulation is not depressed.

During a five-year period, 5,778 patients between the ages of 40 and 90 years were operated on at the New England Center Hospital; 60% of the operations were major, such as intraabdominal or intrathoracic procedures.

The patients were divided into 3 groups. In the first group, 517 patients with known coronary heart disease, the postoperative mortality rate was 2.9%. In the second group,

*Appraisal of the coronary patient as an operative risk. New York J. Med. 54:2065-2067, 1954.

1,107 patients with no previous heart disease but with abnormal, nonspecific electrocardiograms, the mortality rate was 3.6%. In the third group, 4,154 patients with no evidence of heart disease, the mortality rate was 2%.

Postoperative death in patients with preexisting coronary disease was attributable to cardiac causes in 1.2%, whereas, in patients with no preoperative evidence of heart disease, mortality was due to cardiac causes in only 0.1%.

¶ FATAL REACTIONS TO PENICILLIN given by injection are increasing in frequency. From postmortem examinations conducted by the Office of the Chief Medical Examiner in the City of New York in 8 cases of sudden death, Abraham Rosenthal, M.D., of Brooklyn is convinced that penicillin per se, not the form of the drug or the procaine radical, is the sensitizing agent. The antibiotic should be administered by any route only when definitely indicated and only to patients who have no history of previous allergy to penicillin and are not asthmatic at the time.

New York J. Med. 54:1485-1487, 1954.

¶ TREATMENT OF BRONCHIAL ASTHMA or pulmonary emphysema with methantheline bromide (Banthine) results in increased respiratory function and vital capacity. The symptomatic improvement accompanying the enhanced pulmonary ventilation suggests to Albert Sjoerdsma, M.D., and Harold T. Dodge, M.D., U. S. Public Health Service, Bethesda, Md., that the autonomic nervous system is a factor in the bronchospasm of these diseases. The dose of the parasympathetic blocking agent is 50 mg. in 10 cc. of isotonic saline solution, which is injected intravenously during one minute.

Am. J. M. Sc. 227:255-258, 1954.

¶ PULMONARY TUBERCULOSIS therapy by pneumoperitoneum in conjunction with streptomycin and para-aminosalicylic acid expedites the disappearance of cavities and the reversal of the infectious process. The beneficial results were apparent after four and eight months of treatment, but Geoffrey L. Brinkman, M.D., James Raleigh, M.D., and Roger S. Mitchell, M.D., of the Trudeau Sanitorium, Trudeau, and the Veterans Administration Hospital, Sunmount, N. Y., find that pneumoperitoneum is most effective when instituted during the first month of chemotherapy for patients who have cavities measuring 2 cm. or more in diameter.

Am. Rev. Tuberc. 69:963-966, 1954.

Prevention of Rheumatic Fever

CAPT. ROBERT CHAMOVITZ, M.C., U.S.A.F., CAPT. FRANCIS J. CATANZARO, M.C., A.U.S., CAPT. CHANDLER A. STETSON, M.C., A.U.S., AND CHARLES H. RAMMELKAMP, JR., M.D.
Francis E. Warren Air Force Base, Wyoming

*Bicillin therapy for streptococcal respiratory infections prevents rheumatic fever and subsequent heart disease.**

THERAPEUTIC adequacy for streptococcal disease is determined by the disappearance of the organism from the respiratory tract. Frequent oral medication or multiple parenteral injections are usually required. However, after subsidence of symptoms most patients become lax and discontinue oral therapy completely. Multiple injections are not widely favored.

To evaluate the efficacy of a single injection of Bicillin (dibenzylethylenediamine dipenicillin G), a depot preparation slowly absorbed over a period of ten days, a study was made of 366 airmen with either exudative tonsillitis or pharyngitis.

Group A streptococcus was obtained on initial throat cultures from almost all patients. To test the antirheumatic properties of Bicillin, careful bacteriologic and serologic studies were done during the acute and convalescent stages of illness.

Two treatment schedules were employed. Participating in Schedule I were 132 men given 1,200,000 units of Bicillin; 92 men received a single intramuscular injection; 40 were given two simultaneous injections of 600,000 units each. Placebos were administered to 109 control patients.

In Schedule II, 125 men were given one dose of 600,000 units of Bicillin intramuscularly. Therapy was started before the fourth day of illness in 90% of patients in both schedules.

Subsequent throat cultures were done three and five weeks after the onset of illness. On the twenty-first day, the infecting type of streptococcus was isolated from 80% of the control patients, but from only 1 treated patient. By the thirty-fifth day, new serologic types of streptococci were obtained from 5 men in Schedule II, while 10 control patients had acquired new organisms.

No acquisitions of streptococci could be identified in individuals who received 1,200,000 units of Bicillin. The first recurrent streptococcal infection in Schedule I occurred forty-seven days after treatment.

The mean increase in antistreptolysin titer in serums collected dur-

*Prevention of rheumatic fever by treatment of previous streptococcal infections. New England J. Med. 251:466-471, 1954.

impractical patent...

Parachute fire escape—wearer merely leaps from window. Cushioned soles protect user's feet, but a slight oversight in design seems to make the fire a lesser hazard than a broken neck.
Pat. No. 221,855. Nov. 18, 1879.

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Dosage: 1 or 2 tablets before retiring; for children, in proportion. Available: 75 mg. tablets, bottles of 100.

*Marks, M. M., Am. J. Digest. Dis. 20:240, 1953.

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ing the convalescent phase in the groups treated with penicillin was 48 units for Schedule I and 42 units for Schedule II. In the control group, a mean increase of 248 units was noted. No appreciable increase in antibody formation was found in treated patients after five to seven weeks, indicating that the action of Bicillin was continuous and not merely delaying.

Acute rheumatic fever occurred in 2 control patients. Definite nonsuppurative sequelae were not observed in the penicillin-treated persons.

In most patients, Bicillin injections caused local discomfort lasting twenty-four to forty-eight hours. Divided intramuscular injections did not ameliorate pain at the puncture site. Penicillin reactions occurred in 13 patients. Until the frequency of reactions after large doses of Bicillin is established, 600,000 or 900,000 units intramuscularly is recommended for the treatment of streptococcal infections.

Intravenous Administration of Heparin

STANFORD WESSLER, M.D., AND JEROME W. FISCHBEIN, M.D., HARVARD UNIVERSITY, BOSTON, report that heparin may be administered intravenously for long periods without multiple venipunctures.

Polyethylene catheters, 15 cm. in length, are cold-sterilized in a Zephiran chloride solution for at least eighteen hours. Before use, the catheter is washed inside and out with sterile isotonic saline solution.

The patient's forearm is cleansed with soap and water and 70% isopropyl alcohol and surrounded by sterile towels. A thin-walled needle is inserted into a superficial vein and 5 cc. of blood is withdrawn to determine clotting time. The syringe is detached and two-thirds of the catheter is passed through the needle into the vein. The needle is then withdrawn, and a Tuohy-Borst adapter with a rubber stopper is attached to the free end of the catheter. Tubing and adapter are secured to the arm separately with tape and an Ace bandage.

Intermittent injections of heparin or constant intravenous drip may be administered by inserting the needle into the rubber stopper after cleansing with alcohol. Other intravenous infusions and whole blood may be administered by the same route.

The tube may be left in place for as long as four weeks. Movement of the arm is not restricted. If local pain and tenderness occur, the catheter is then removed and another is inserted into the opposite arm.

An improved method for the intravenous administration of heparin. New England J. Med. 250:860-863, 1954.

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In pharmacologic studies, using the Allen-Doisy technic, Vallestril was found to be more active than estradiol and twice as potent as estrone on the vaginal mucosa. On the other hand, using the Rubin technic, Vallestril was found to have only one-tenth the activity of estrone on the uterus, a suggested explanation of its observed low incidence of withdrawal bleeding.

In clinical evaluation, covering a period of two and one-half years, Vallestril was found* to be "an effective synthetic estrogen . . . singularly free from toxic effects and complications, especially uterine bleeding. . . . The beneficial effect of the medication appeared within three or four days in most menopausal patients. . . . failure to encounter withdrawal bleeding in any patient was most gratifying. . . ."

Such unwanted reactions as nausea, mastalgia and edema also occur less frequently with Vallestril.

Vallestril is preferentially indicated whenever estrogens are of value: The menopausal syndrome and the pain of postmenopausal osteoporosis and osseous metastases of prostatic cancer.

Dosage: Menopause—3 mg. (1 tablet) two or three times daily for two or three weeks, followed by 3 or 6 mg. daily for one month. Supplied only in scored tablets of 3 mg. G. D. Searle & Co., Research in the Service of Medicine.

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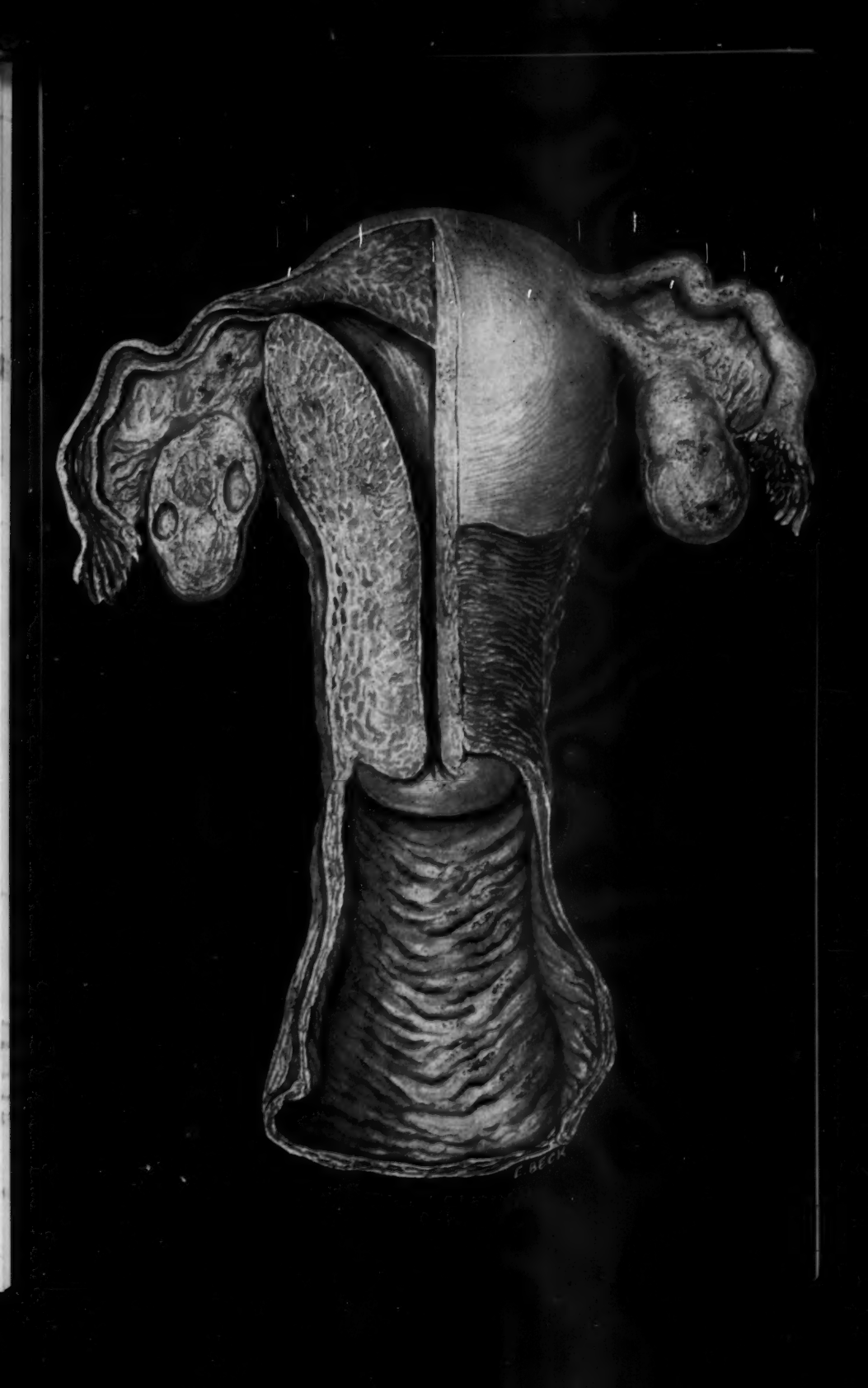
*Sturnick, M. I., and Gargill, S. L.: New England J. Med. *247*:829 (Nov. 27) 1952.



Endocardial Fibroelastosis

WILBUR A. THOMAS, M.D., RAYMOND V. RANDALL, M.D., EDWARD F. BLAND, M.D., AND BENJAMIN CASTLEMAN, M.D.
Harvard University, Boston

*A relatively rare form of heart disease is distinguished by cardiac hypertrophy and extensive fibroelastic thickening of the endocardium and subendocardial areas.**

MORPHOLOGIC and clinical manifestations of endocardial fibroelastosis are identical in infants and children, suggesting a congenital origin of the disease. Intrauterine endocardial anoxia from premature closing of the foramen primum or foramen ovale with resulting fibroelastosis has been proposed as a cause. The theory of fetal endocarditis has been discarded because histologic proof of healed or active inflammation has not been found.

In adults, the duration of symptoms is much longer, with chronic congestive failure and embolization occurring more frequently than in infants and children. Although the time lag between birth and onset of symptoms militates against a congenital etiology in adults, the pathologic involvement is usually less than in children, which may account for a long asymptomatic period. An incidence of obscure heart disease in close relatives may be noted, indicating both familial and congenital origins.

Review of 10,000 autopsies made during 1930-54 revealed 24 cases of chronic heart disease of uncertain etiology. Of these, 20 showed unusual degrees of fibroelastosis. In children under 2 years of age, advanced generalized endocardial thickening was most prominent in the left ventricle. In most areas, a clear line of demarcation could be observed between the thickened endocardium and underlying myocardium. Patchy myocardial fibrosis was occasionally located close to the endocardial surface. Myocardial fibrosis appeared as a secondary condition.

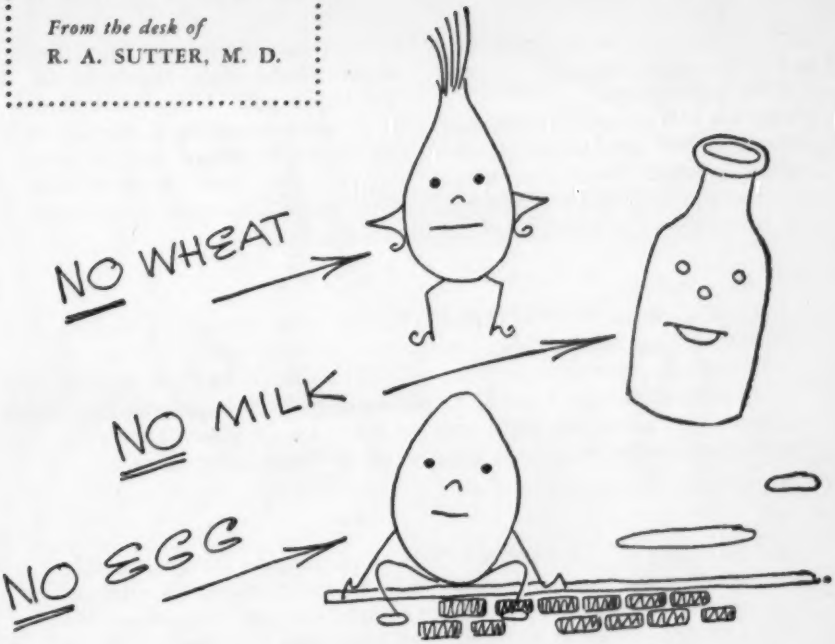
Some degree of fibroelastic endocardial thickening was noted in all adults. Myocardial fibrosis was no more prominent than in infants and in many cases did not occur. Mural thromboses were frequent and resultant emboli were often responsible for eventual deterioration of the patient. Although in some cases a few lymphocytes were found in the myocardium, consideration of inflammatory origin was not justified.

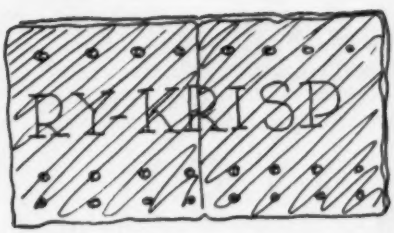
To correlate the severity of symptoms with relatively unimpressive morphologic changes, the following theories have been advanced:

- The thickened endocardium may interfere with contraction and relax-

*Endocardial fibroelastosis: a factor in heart disease of obscure etiology. New England J. Med. 251:327-338, 1954.

From the desk of
R. A. SUTTER, M. D.





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ation of the heart in the same way as a thickened pericardium in constrictive pericarditis.

• The thickened endocardium may prevent proper conduction of contraction impulses. Most cases manifest arrhythmias, delayed conduction, or both.

• The thickened myocardium may jeopardize the blood supply to underlying muscle. Myocardial fibrosis in some cases lends support to this theory. However, lack of fibrosis in other cases suggests that other factors may possibly be implicated.

¶ BLACK WIDOW SPIDER BITES are most effectively treated with specific antivenin. After intravenous administration of 10 cc. of 10% calcium gluconate or 2 cc. of 50% or 10 cc. of 25% magnesium sulfate solution, Leon J. Taubenhaus, M.D., of Shallotte, N.C., injects 5 cc. of the antivenin into the buttocks. To patients sensitive to serum, the medicament is given in small desensitizing doses.

Tri-State M. J. 2:12-16, 1954.

¶ ACTIVITY OF TUBERCULOSIS of the lungs is more accurately reflected by the plasma viscosity than by the erythrocyte sedimentation rate. Although variations in plasma viscosity are not specific for any disease, Louis Benson, M.D., and Jean Goddard, M.D., of Vermont Sanatorium, Pittsford, Vt., find that the viscous quality may increase to as much as 2.8 during the active tuberculous state and return to the normal level of 1.7 with recovery. In 5,000 comparative determinations in 420 patients with pulmonary tuberculosis, the sedimentation rates were abnormal in 85% of active cases and normal in 80% of inactive cases, whereas the comparable viscosity values occurred in 95% and 98%, respectively.

Am. Rev. Tuberc. 69:595-598, 1954.

¶ INTRAMUSCULAR TERRAMYCIN causes little local or systemic reaction and is probably less likely to cause micrococcal ileocolitis than Terramycin administered by the oral route, report Thomas L. Brannick, M.D., and associates of the Mayo Clinic, Rochester, Minn. From 200 to 300 mg. of the antibiotic suffices to maintain high blood concentrations and control most acute, slight, or moderate infections; the dose is usually 100 mg. for adults, 6 to 12.5 mg. per kilogram of body weight for children, every eight to twelve hours. Intravenous preparations, which have the disadvantage of tending to induce phlebitis, are more feasible if high concentrations of the drug in the serum are needed rapidly.

Proc. Staff Meet., Mayo Clin. 29:183-192, 1954.

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Thiamine Mononitrate	6 mg.	
Riboflavin	6 mg.	
Nicotinamide	30 mg.	
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Therapy of Inoperable Pulmonary Cancers

HAROLD GUYON TRIMBLE, M.D.
Stanford University, San Francisco
WILLIAM B. LEFTWICH, M.D.
Highland Alameda County Hospital, Oakland, Calif.

*Roentgen-ray treatment and chemotherapy are the primary palliative measures used for inoperable cancers in the thorax.**

SURGERY is the preferred treatment for malignant disease of the chest, but many of the cancers are inoperable. Palliative measures relieve symptoms and, in some instances, prolong life. Tested therapeutic methods should generally be used unless research funds spare the patient the cost of new drugs and modalities.

The only procedure known to destroy cells of a primary lung cancer is roentgen-ray therapy. Cell types in order of susceptibility are anaplastic, epidermoid, and adenocarcinomatous. Pleural invasions frequently are radioresistant.

Palliative roentgen-ray treatment is recommended for obstruction of the superior vena cava, bronchial extensions not amenable to bronchoscopic fulguration, local skin or axillary involvement, and for bone pain caused by metastases. Amelioration is usually best when least needed. Roentgen rays must be used with caution for senile or cachectic patients and when the tumor is necrotic and has drained through a bronchus.

Nitrogen mustard is of value in treating bronchogenic carcinoma. A single dose of the methyl-bis form is given intravenously every four to six weeks for four to six months or longer. Dosage is 0.4 to 0.6 mg. per kilogram of body weight. The agent is diluted in 10 cc. of normal saline and injected with a liter of intravenous glucose solution.

The fasting patient is given 1.5 gr. of Nembutal and 100 mg. of pyridoxine before the nitrogen mustard, and 50 mg. of Benadryl is dissolved in the glucose. A half hour and two hours later, 50 mg. of Dramamine is administered. The degree of nausea and vomiting may be decreased by administering 25 mg. of ACTH intramuscularly or 25 to 50 mg. of cortisone by mouth every six hours, starting four hours before nitrogen mustard is given.

Blood values are obtained twice weekly to assess the bone marrow reaction.

Triethylene melamine (TEM) acts similarly to nitrogen mustard but can be given by mouth. Oral tablets containing 2.5 to 5 mg. should be taken every day or three times

*Malignant disease in the chest—its management when inoperable. Geriatrics 9:421-427, 1954.

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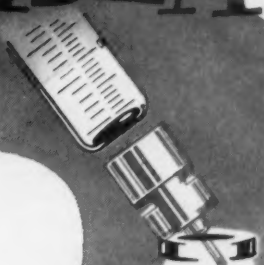
Special *aspirating* syringe assures complete and positive aspiration with maximum ease.



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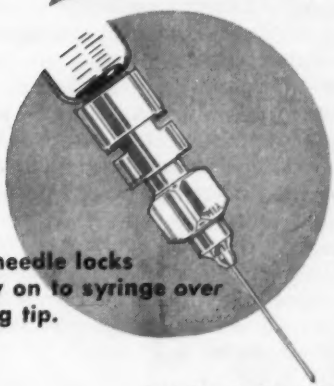

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weekly with a half glass of water first thing in the morning. Food or fruit juice destroys the pharmacologic activity of TEM. Breakfast may be eaten one hour later.

Immediate reactions are rare. Therapeutic results should be manifest after two or three weeks. If improvement is not evident in a month, and pronounced leukopenia and anemia are apparent, any benefit is unlikely.

Treatment of metastatic lung cancer varies with the primary site. If the disease originates in the breast and the woman has not reached the menopause, surgical or roentgen-ray castration is done and 100 to 300 mg. of testosterone propionate is administered intramuscularly each week. After the menopause, 1.5 mg. of oral ethinyl estradiol daily or 3 mg. of intramuscular estradiol benzoate is recommended dosage.

When the primary disease is in the thyroid, radioiodine may be administered, although only 15% of metastases take up the agent. Surgical or roentgen-ray castration and androgen therapy are used when the ovary is the original site, and castration and estrogen therapy when the disease started in the prostate.

For myeloma, 100 mg. of Stilbamidine is given every forty-eight hours for fifteen doses. The schedule is repeated after two weeks' rest for a total of 4 to 6 gm. over four to five months.

Nonspecific measures are instituted to relieve wheezing, cough, infection of the bronchi, obstruction, hemorrhage, or pain accompanying lung cancer. Nutritional adjuncts may also offer palliation.

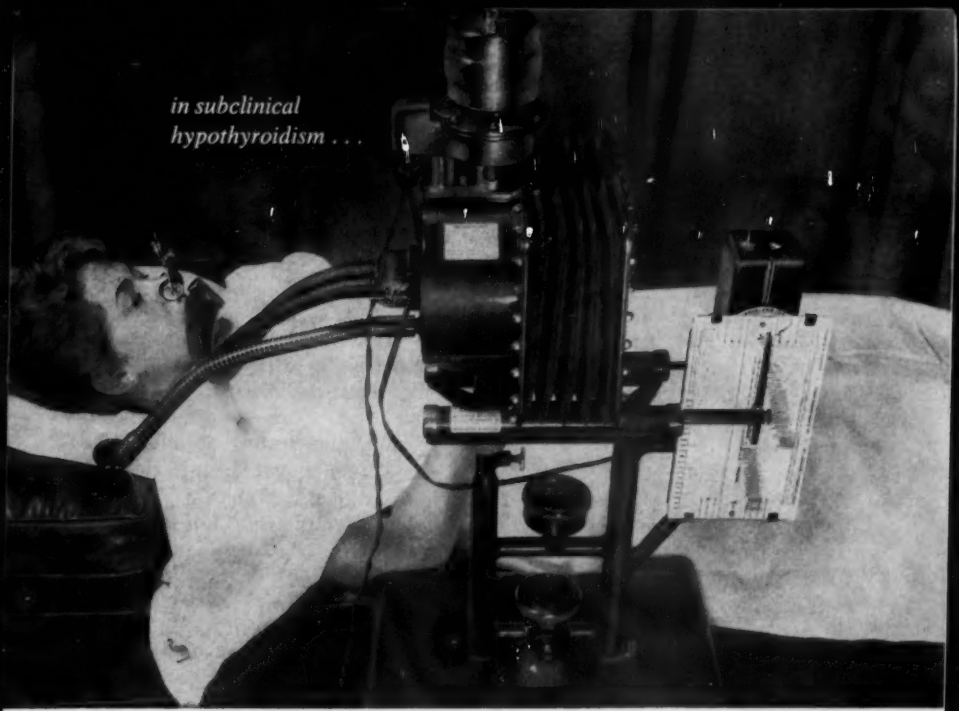
Chair Treatment for Acute Coronary Thrombosis

WALTER S. COE, M.D., UNIVERSITY OF LOUISVILLE, KY., by measurement of cardiac output and arterial pressure, finds that the work of the heart is 23% less for a patient who sits in an armchair than for one who reclines in bed. These measurements substantiate previous clinical observations that patients with acute coronary thrombosis often do best when allowed to sit in an armchair.

When armchair therapy is used, the physician must be sure that the chair does not unduly compress the popliteal space and predispose to venous thrombosis in the legs. The patient who is allowed to sit up must be cautioned not to take the condition too lightly and try unauthorized activities. To avoid undue effort, the patient should be transported from bed to chair.

Individuals have fewer bowel and bladder complications with chair treatment and adopt a more hopeful attitude than when confined to bed. This position should not be assumed by those with shock or symptoms of cerebral ischemia.

Cardiac work and the chair treatment of acute coronary thrombosis. Ann. Int. Med. 40:42-48, 1954.



when the BMR is "normal"

In the "twilight zone" of hypothyroidism, the basal metabolic rate is not always an accurate key to diagnosis. A constellation of somatic complaints including fatigue, cold intolerance, dry skin and bradycardia may be more significant than the BMR. According to Watson[1] "the patient and not the test should be treated . . . once the diagnosis is established, give enough thyroid to alleviate symptoms, regardless of the results of the basal metabolic rate."

Proloid, the *improved* thyroid, assures more predictable therapy. Virtually pure thyroglobulin, Proloid is free from unwanted organic factors. It is assayed both chemically and biologically, in test animals, to provide constant potency and uniform metabolic effect. In view of the importance of unvarying metabolic response,[2] prescribe Proloid whenever thyroid therapy is indicated.

Proloid is prescribed in the same dosage as ordinary thyroid and is available in ¼, ½, 1, 1½ and 5 grain tablets as well as powder.

1. Watson, B. A.: New York State J. Med. *54*:2045 (July 15) 1954.
2. Hurxthal, L. M.: M. Clin. North America *32*:122 (Jan.) 1948.

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the improved thyroid

WARNER-CHILCOTT

Acute Diseases of the Liver

JOHN R. KELSEY, M.D.
Baylor University, Houston

Viruses, bacteria, parasites, Leptospira, *toxic agents, or vascular catastrophes may cause severe liver diseases.**

THE most common *viral disease* of the liver, infectious hepatitis, is spread by fecal contamination of food. Homologous serum hepatitis is transmitted through whole blood or pooled plasma, or by contaminated syringes. Since asymptomatic carriers have been detected among blood donors, the need for careful screening is obvious. Occasionally, infectious mononucleosis produces signs of hepatitis.

The diagnosis is based on manifestations rather than identification of the viral agent. Regardless of the causative agent, the patient usually has anorexia, malaise, generalized aches, and right upper quadrant discomfort for two to fourteen days before dark urine, light stools, and jaundice are noted. The liver is often enlarged and tender. Fever, pruritus, and splenomegaly occur less commonly.

The bromsulphalein, serum bilirubin, thymol turbidity, and cephalin flocculation are elevated. Young people may have anicteric forms of hepatitis with positive reactions to the flocculation test but no jaundice.

Viral cholangiolitic hepatitis may be confused with extrahepatic biliary obstruction because results of the flocculation tests are usually normal; the serum alkaline phosphatase is elevated and the fecal urobilinogen decreased.

Occasionally, a fulminating variety of viral hepatitis, acute yellow atrophy, causes death within a few days.

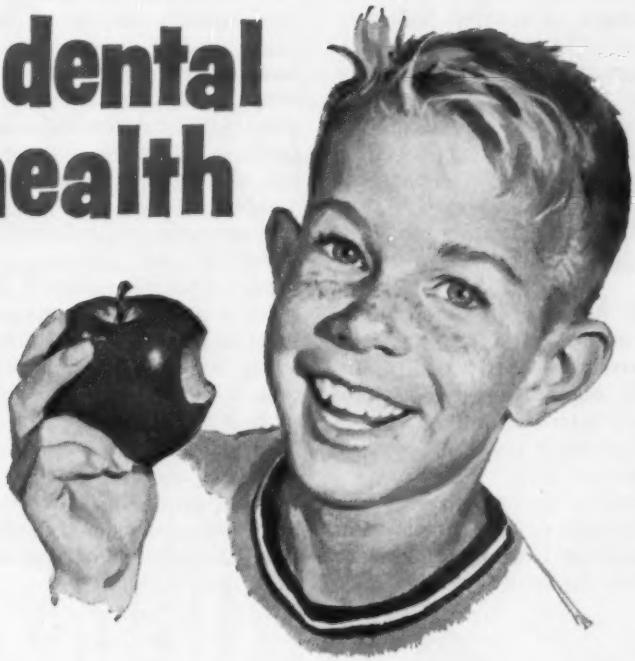
With widespread use of antibiotics, *bacterial infections* of the liver have been noted frequently. The disease generally originates in the abdomen. The manifestations of liver disease caused by suppurative hepatitis are of secondary importance to the septic process.

Leptospiral infections such as Weil's disease are often overlooked in this country. Water, food, and soil may be contaminated with infected urine; dock workers, butchers, veterinarians, and sewer workers are especially likely to contract the disease. With Weil's disease, an influenza-like syndrome occurs after an eight-day incubation period. Hepatomegaly and jaundice are noted. Diagnosis is established when the organisms are visualized in the blood or when blood agglutinations become positive.

The liver may be infected by *parasitic infestations.* Sudden onset of severe pain and tenderness over

*Acute diseases of the liver. Texas State J. Med. 50:642-645, 1954.

A delectable aid to dental health



Today's diet, often soft and containing relatively large amounts of carbohydrates, poses a constant threat to teeth and gingivae. A fresh juicy apple after meals is a tasty aid to conservation of dental health. The apple is a succulent cleanser, highly efficacious, convenient and enjoyable. Its firm chewable texture gives needed massage to flabby gums. Its delicate aroma and lively flavor stimulate the salivary glands to copious secretion. These benefits are provided through regular everyday eating of apples. Your patients will quickly recognize the merits of a recommendation to "eat an apple after meals."

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the liver area with leukocytosis and fever in a patient with amebiasis suggest amebic hepatitis.

The signs of amebic abscesses, on the other hand, are poorly localized; jaundice and other evidence of liver dysfunction are unusual. The abscess may perforate into the chest. Diagnosis may be proved by a therapeutic trial with chloroquine or emetine, specific drugs for amebic infestations. Hepatitis should be looked for in all patients with malaria.

Toxic hepatitis is produced by drugs, poisons, and toxins. Manifestations are similar to infectious hepatitis but intestinal symptoms are more intense. Central nervous and respiratory tract involvement is common.

Occlusive vascular processes such as thrombosis of the hepatic veins may produce liver disease. Acute infarct in the liver may be caused by surgical ligation of the hepatic artery or by arterial disease.

Treatment of acute hepatic disease consists largely of bed rest until jaundice disappears and liver function returns toward normal. A person with liver disease should receive 3,000 calories daily in 5 to 6 feedings. Quantity is more important than composition of the diet. Vitamin K should be administered for prothrombin deficiency.

ACTH and cortisone may be tried for patients severely ill. Penicillin is given to patients with leptospiral infections, and BAL is of value for toxic hepatitis from metallic intoxication with arsenic, gold, or bismuth.

Oxygen, blood, antibiotics, and cortisone are used to treat hepatic coma; glucose, vitamins, and potassium are administered parenterally. Despite adequate therapy, the mortality rate is 90%.

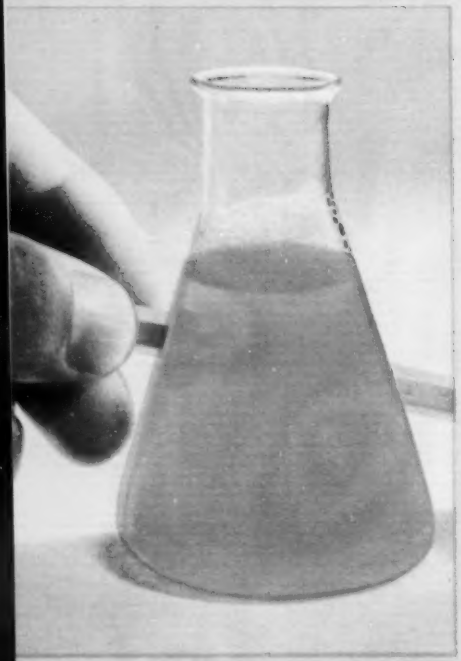
Farmer's Lung: Bronchopulmonary Moniliasis

PHILIP H. SOUCHERAY, M.D., ST. PAUL, believes that mycotic pneumonitis may be an occupational disease of farmers. Most evidence suggests that *Candida albicans* is the etiologic agent. Inhalation of the dust of hay or moldy grain is the usual method of infestation by the organism.

Dyspnea and cough occur after exposure to the dust. Symptoms persist for months but gradually subside when further contact is avoided. Chest roentgenograms reveal mottled infiltration of the lung fields extending to the periphery. Resolution occurs subsequently and nodular or fibrous densities appear. After many years of exposure, the condition progresses to a fibrocavitary disease resembling tuberculosis.

Diagnosis of monilial infection must be accurate before starting therapy, because antibiotics may increase growth of the fungi. Iodides often relieve the condition.

Farmer's lung. Minnesota Med. 37:251-253, 1954.



After ½ hour in artificial gastric juice (pH 1.6), BICILLIN *remains relatively insoluble, and is nearly 75% active.*[2]

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1. *American Medical Association: New and Nonofficial Remedies, 1954. J. B. Lippincott Co., Philadelphia, p. 147*

2. *Scott, R. L., and others: Antibiot. & Chemo. 4:691 (June) 1954*

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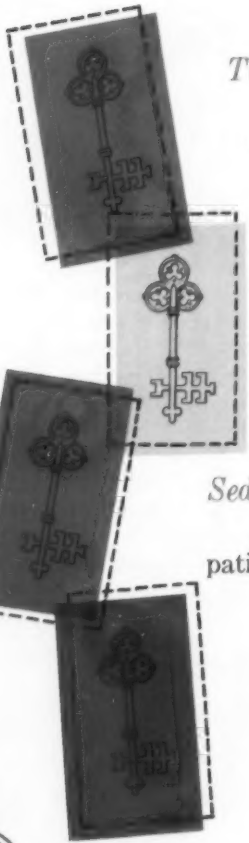

Topical anesthetic action
more powerful than
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Antihistaminic action
which helps control cough,
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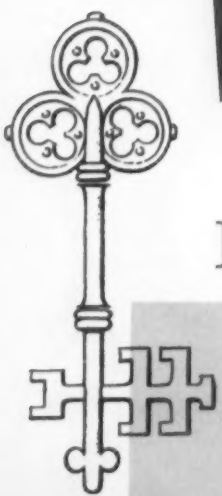
allergy-caused congestion

Sedative action
which may make "cough
patients" less irritable in general

Expectorant action
to aid in secretion of
protective mucus, thus
rendering the cough productive



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¶ TREATMENT OF TUBERCULOUS MENINGITIS with antituberculous drugs should begin early and be continued for at least a year. A daily regimen of 2 gm. of streptomycin, at least 16 gm. of sodium PAS, and usually 10 mg. of isoniazid per kilogram of body weight was used at the Veterans Administration Hospital, Hines, Ill., report Eugene J. Des Autels, M.D., and Karl H. Pfuetze, M.D. Dosage of isoniazid was reduced to 6 or 7 mg. per kilogram after the first few weeks of therapy and to 4 or 5 mg. after convalescence was well established. Of 16 patients, including 5 with associated miliary tuberculosis, 14 were living eight to eighteen months after institution of therapy.

Ann. Int. Med. 40:1135-1144, 1954.

¶ MALARIAL PROPHYLAXIS is completely achieved with the antimalarial drugs chloroquine (Aralen), amodiaquin (Camoquin), and pyrimethamine (Daraprim). Among 148 African school children, Max J. Miller, M.D., of the Liberian Institute of the American Foundation for Tropical Medicine, Harbel, found that the splenic regression obtained with all the drugs was similar but appeared most quickly during the administration of amodiaquin. Disappearance of asexual parasites was effected most rapidly with chloroquine base in the dosage of 0.15 gm. weekly, adequately but more slowly with pyrimethamine in 12.5-mg. weekly doses, and somewhat less effectively with amodiaquin in amounts of 0.2 gm. a week. Gametocytes were suppressed by all the medicaments after several weeks of administration, although in children receiving pyrimethamine, the gametocyte rate showed an early transient rise

Am. J. Trop. Med. 3:458-463, 1954.

¶ ACUTE BRONCHOPULMONARY SUPPURATION may disappear rapidly with the endobronchial instillation of oleaginous penicillin directly into the bronchus. In most cases, the patient's temperature returns nearly to normal the day after 2 or 3 cc. of a preparation representing 600,000 to 900,000 units of the antibiotic is introduced, reports A. Albert Carabelli, M.D., of St. Francis Hospital, Trenton, N. J., and the University of Pennsylvania, Philadelphia. Reversion of the sedimentation rate parallels clearing of the lesions, usually within one week, as demonstrated by roentgenograms. The method is recommended not only as prophylaxis against the development of chronic sequelae but also for poor-risk subjects before surgery.

Dis. of Chest 25:316-327, 1954.

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Ferrous Sulfate, Anhydrous.....600 mg.	Equal to over 1 Gm. Ferrous Sulfate, U.S.P.
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Note that Special Liver-Stomach Concentrate, Lilly, is retained. In addition to intrinsic factor, this complex supplies compounds that add the broad nutritional support so important in the treatment of all types of anemia.

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Medical Forum

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Sterility and Ovarian Disease*

QUESTION: How often does ovarian disease cause sterility?

Comment invited from

WILLIAM F. FINN, M.D.
A. W. DIDDLE, M.D.
C. A. STERN, M.D.
MICHAEL L. LEVENTHAL, M.D.
A. R. ABARBANEL, M.D.
ROBERT N. RUTHERFORD, M.D.

► TO THE EDITORS: Dr. McGoogan has summarized the influence of the ovaries on infertility in a very complete fashion. The ovaries play a small but very important role in sterility. There are four major changes in the ovaries which may affect sterility. These alterations are anomaly, infection, tumor and atrophy.

Anomalies of the ovaries such as agenesis or hypoplasia, while extremely infrequent, may cause infertility. Since they are often associated with other malformations, it is difficult to ascribe the infertility solely to the ovaries but the ovary does have at least a contributory role.

The next major group of ovarian lesions which cause infertility results from inflammation—perioophoritis, tubo-ovarian abscess, and so on. These may be of diverse bacterial origin—gonorrheal, streptococcal, or tubercular. While the associated tubal disease is probably the more important cause of infertility, ovarian involvement, either as a primary lesion or secondary to tubal disease, may result in infertility.

Ovarian tumors may affect fertility by [1] interference with ovulation and menstruation or [2] replacement of the stroma and cortex of the functioning ovary. Examples of the former are persistent follicle cyst, microcystic ovaries, Stein-Leventhal syndrome, and granulosa cell tumors, all of which produce a state of hyperestrinism with resultant loss of ovulation and changes in menstruation varying from menorrhagia to amenorrhea. Arrhenoblastoma, a masculinizing tumor of the ovary, may also cause amenorrhea, defeminization, and virilism with resultant infertility. Bilateral dermoid cyst of the ovaries and bilateral endometriosis which may replace the entire ovarian substance are illustrative of the second type of ovarian involvement. These tumors, by their presence, may prevent ovarian function or, since their complete eradication may necessitate bilateral oophorectomy, result in sterility. Primary or metastatic

*MODERN MEDICINE, June 15, 1954, p. 93.

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1. Fetter, T.R., Delaware State Med. J. 25: 309, Nov. 1953.

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cancers of the ovaries produce the same result.

Atrophy of the ovaries occurs at the menopause with resultant infertility. The effects on infertility are noted more definitely when the menopause occurs prematurely.

WILLIAM F. FINN, M.D.
New York City

► TO THE EDITORS: Dr. McGoogan recommends that in a sterility problem involving a couple, both husband and wife be studied thoroughly before treatment is instituted for ovarian pathology. This bears repeating. Too often ovarian pathology is considered the principal cause of sterility when actually unestablished by adequate study.

Three points mentioned in Dr. McGoogan's discussion are either controversial or stimulate further comment. First, the value of stilbestrol in the control of endometriosis appears questionable in light of Laman Gray's recent study. Second, it is equivocal as to whether or not suspension of the internal genitals diminishes the progress of endometriosis. The late John Sampson, after extensive study of this disease, eventually came to the conclusion that suspensory operations on the internal genitals were of little or no value for this purpose. Third, ovarian resection for the purpose of improving ovulatory function should be considered with caution.

Several years ago, while working in the laboratory of the late Edgar Allen, I found that certain irritants of chemical or traumatic nature applied to the surface of ovaries of adult *Macaca rhesus* monkeys and rats not uncommonly precluded ovulation; corpora lutea atretica or retention follicular cysts were formed. These ovulatory disturbances presumably were dependent on injury to the germinal epithelium or fibrosis of the ovarian capsule.

Severe bacterial inflammatory injuries to the ovary presumably may preclude ovulation in a similar manner. Whether or not lysis of adhesions or resection of an ovary is beneficial in aiding ovulatory function probably depends on how much the germinal epithelium is injured, how much fibrosis there is of the capsule, and whether or not the ovarian blood supply is seriously disturbed. These three things would require evaluation before operation.

A. W. DIDDLE, M.D.
Knoxville, Tenn.

► TO THE EDITORS: This question of how often ovarian disease causes sterility cannot be answered satisfactorily for two reasons: [1] a definite cause of sterility can be assigned to any one organ or system in only about one-half of cases when the female partner is completely investigated; [2] the role of ovarian disease as a cause of sterility cannot be separated from altered ovarian physiology or dysfunction which is the etiologic basis of most sterility involving the ovary.

Thus, the ovary is necessary for the function of the endometrium,

(Continued on page 170)

in chronic calcific tendinitis—

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"easy, safe, and free of side-reactions"[1]

"adaptable for routine office use"[1]

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1. Susinno, A. M., and Verdon, R. E.: J.A.M.A. *154*:239 (Jan. 16) 1954.
2. Rottino, A.: Journal Lancet *71*:237, 1951.
3. Pelner, L., and Waldman, S.: New York State J. Med. *52*:1774 (July 15) 1952.

"pioneers in adenylic acid therapy" Bischoff

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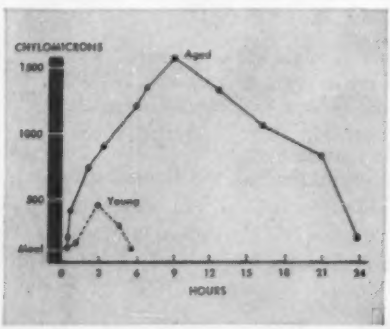
ATHEROSCLEROSIS

Revised concepts of etiology predicate new therapeutic approach

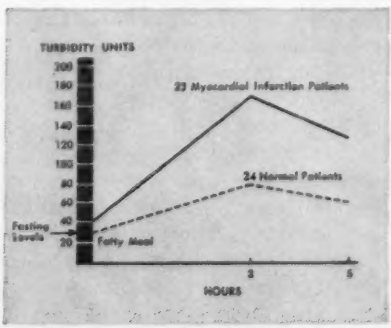
Recent studies attach increasing importance to the particle size and physical characteristics of certain blood lipids, rather than total serum cholesterol as such, in the genesis of atherosclerosis. Assays of neutral fat particles in the blood (chylomicra) following fat ingestion, and the closely related concentration of low-density "giant" lipoprotein molecules, show much greater correlation with clinical atherosclerosis than either the serum cholesterol level *per se* or the cholesterol-phospholipid ratio.

It has also been shown that (1) a high incidence of hypercoagulability and low blood heparin levels exist in patients with cardiovascular disease and atherosclerosis; (2) circulating heparin tends to decrease with age; and (3) an inverse ratio exists between the concentration of giant lipoprotein molecules and serum heparin levels.

Parenterally administered, heparin exerts a profound "clearing" action on chylomicra and the giant molecules. This action is independent of heparin's anticoagulant effect. In the treatment of atherosclerosis, the addition of choline and specific B vitamins appears to enhance heparin's efficacy. Vitamin B_{12} and folic acid aid in the synthesis of labile methyl groups and the transmethylation process. Choline specifically increases the phospholipid turnover, and parenterally administered, it has been shown to have a distinct vasodilating effect. *Most significantly, however, choline decreases the anticoagulant action of heparin, when both drugs*



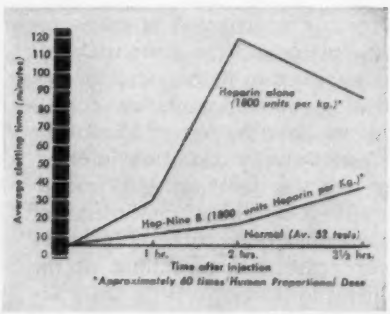
Chylomicron curves of fasting young and old subjects after a Standard fat meal. After Becker et al: Science 110:529, 1949.



Fat Tolerance in Myocardial Infarction and Control Patients. From data of Schwartz et al: JAMA 149:364, 1952.

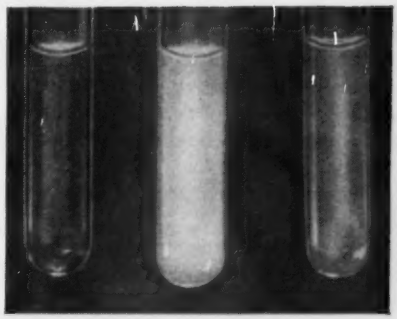
are administered simultaneously at the same site, without impairing the clearing effect of heparin. Thus the use of heparin for atherosclerotic diseases is rendered safe as a routine office procedure, without necessity for periodic clotting time determinations.

A preliminary clinical report* on HEP-NINE B—which combines heparin, choline, vitamin B_{12}, folic acid and niacinamide for intramuscular injection—indicates that the combination offers considerable promise in a variety of conditions in which atherosclerosis plays a part, such as angina pectoris, myocardial infarction, coronary disease,



Comparison of effects of Hep-Nine B and Heparin alone on clotting time

related kidney and liver diseases, diabetes mellitus, and certain cases of obesity. Pharmacologic studies showed no significant effect on coagulation time, even in dosage far exceeding that recommended. Chylomicron concentration was reduced promptly in all cases following a single injection, ranging from a minimum 29% reduction (diagnosis: anterior myocardial infarction) to a maximum of 100% (diagnosis: multiple cerebral thrombosis). In patients selected for a history of myocardial infarction or diabetes, the atherogenic index as determined by the Gofman Serum Lipoprotein Test was materially reduced in all cases without benefit of diet restriction. Of 30 patients with recurrent angina pectoris, 23 experienced marked reduction in frequency and severity of episodes. Nitroglycerine requirements were reduced and exercise tolerance was increased in all cases. No patient suffered coronary occlusion or myocardial infarction during the period of study.



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Heparin Sodium (2500 units)	25 mg.
Choline Chloride	100 mg.
Vitamin B_{12}	15 mcg.
Folic Acid	2 mg.
Niacinamide	50 mg.

Recommended dosage is 1 or 2 cc. intramuscularly, once or twice weekly. Supplied in 10 cc. multiple dose vials.

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**Read, J. T., and Obetz, R. C.: Clinical Experience with Parenteral Heparin-Lipotropic Therapy in Cardiovascular Diseases. Ohio State M. J. (In press).*

cervix, and tubes, but the part that dysfunction of these organs plays in the sterile patient is, as yet, poorly understood. To further complicate the picture a balanced reciprocal relationship exists between the ovary and the other endocrine systems of the body.

Ovarian dysfunction may be associated with cysts or solid tumors of any type which contain or produce endocrine material; dysfunction may be secondary to pituitary, adrenal, or thyroid disease; it may be, and frequently is, primary in the ovary itself. Ovarian dysfunction probably accounts for less than 25% of all the known causes of sterility. Clinically it expresses itself as some alteration in the usual or normal menstrual cycle. Ovulation may or may not be present, but irregular or persistent ovulatory failure is the cause of sterility in most of these patients with ovarian dysfunction. The cause of sterility in those patients with menstrual disorders who have been shown to ovulate is, again, not well understood. Most of these patients fall into the functional bleeding group and it is thought that the ovary fails to develop or maintain a normal secretory endometrium, thus depriving the ovum of a "prepared" surface in which to implant.

Persistent failure of ovulation associated with regular cyclic bleeding occurs but is uncommon and probably accounts for less than 5% of all female sterility.

The treatment of the sterile patient with a persistent or enlarging ovarian cyst, whether follicular, luteal, endometrial, or polycystic, is usually surgical. For the patient with consistent failure of ovulation, no satisfactory treatment exists. Those patients who show sporadic ovulation or who are ovulating with an inadequate endometrium will sometimes spontaneously correct themselves. Treatment remains largely experimental and consists of the use of the various types of ovarian hormones alone or in combination. The type of menstrual irregularity together with the endometrial picture serves as therapeutic guides.

C. A. STERN, M.D.
Sioux Falls, S.D.

► TO THE EDITORS: The extrusion of the ovum and the hormonal factors involved in its maturation, fertilization, and implantation constitute the contribution of the ovary to fertility. Any condition interfering with this function may lead to sterility. Congenital infantilism of the ovaries may cause a primary amenorrhea due to failure of the follicles to develop with a tendency toward atresia. These ovaries fail to respond to hormonal stimuli and thus account for the anovulation in the typically eunuchoid female.

Physiologic aberrations of the ovary affecting fecundity are not uncommon and are due to disturbances of the other endocrine glands, metabolic disturbances, and systemic diseases. Acquired diseases of the ovary account for a considerable number of cases of sterility. These include infections, cystic degeneration of the ovaries, endometriosis, and benign or malignant

BOTTLED CARBONATED BEVERAGES

FOR PROTECTION AGAINST WATER-BORNE DISEASE

Since the turn of the century, published clinical reports have shown that, in addition to taste-appeal and thirst satisfaction, the typical bottled carbonated beverage has definite purity features.

Shillinglaw and Levine[1] substantiate these findings by showing that the principal ingredients of bottled carbonated beverages destroy Esch. coli, the more resistant and most commonly used test microorganism in water sanitation control.

Starting with edible acid solutions, in themselves distinctly germicidal, the researchers found that addition of sugar or carbon dioxide, in the amounts present in bottled carbonated beverages, gave added effectiveness and reduced even further the time required to destroy the test microorganisms. For example, over 40% reduction in time was noted when 10% sucrose was added to a 0.02 N citric acid solution innoculated with Esch. coli, at 30°C. By carbonating the citric acid solution with 2.5 volumes of carbon dioxide the reduction in time was 70%.

The effect of carbonation and edible acid solutions on E. typhosa showed even more dramatically their purifying action, requiring for bacterial destruction as little as one-fourth the time required with Esch. coli. Thus it was shown that E. typhosa, a common cause of water-borne disease, has virtually no possibility of survival in bottled carbonated beverages.

These studies provide conclusive evidence that carbonated soft drinks, prepared and bottled under the highest standards of chemistry, engineering and hygiene, have an added factor operating to provide a safe source of essential fluid intake.

That is why, when local drinking water is under suspicion due to flood or other possible water-polluting catastrophies, bottled carbonated beverages are often employed by relief agencies for protection against water-borne diseases.

1. Shillinglaw, C. A., and Levine, M., Food Res. 8:464, 1943.

The American Bottlers of Carbonated Beverages is a non-profit association of manufacturers of bottled soft drinks, with members in every State. Its purposes . . . to improve production and distribution methods through education and research, and to promote better understanding of the industry and its products.

tumors. With infections and endometriosis, the pathology may be so slight as to preclude diagnosis by bimanual examination, even in expert hands.

The use of the culdoscope or exploratory colpotomy may be most revealing and direct the way to definite therapy. Pneumoroentgenography may disclose polycystic ovaries not palpated on pelvic examination. The prophylactic and early treatment of pelvic infections by antibiotics and chemotherapeutic agents has salvaged many ovaries and thus has preserved fertility.

Endometriosis of the ovary in the reproductive years should be treated conservatively. It is known that pregnancy in some unexplained way acts favorably in inhibiting endometrial growth. With this in mind, all other possible factors involved in infertility should be thoroughly studied and eliminated with the view of accomplishing conception. If the endometriosis is disabling and does not respond to medical measures, conservative surgery—resecting the growths and preserving all normal tissue—may be indicated. The treatment of tumors is self evident.

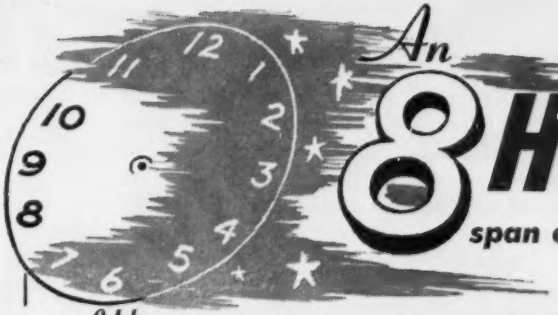
An unexplained condition of the ovaries producing sterility is the bilateral polycystic disease first described by Stein and Leventhal in 1935. The return of menstruation and fertility after simple wedge resection of the cystic portions of the ovaries is dramatic. We have had 2 patients, 1 with an eight-year amenorrhea and 1 with a seven-year amenorrhea, both of whom menstruated regularly after resection and conceived thereafter voluntarily. The true syndrome is not common and the promiscuous resection of cystic ovaries not belonging in this category should be condemned.

MICHAEL L. LEVENTHAL, M.D.
Chicago

► TO THE EDITORS: Dr. McGoogan has presented very clearly a not too uncommon problem—infertility as a result of ovarian dysfunction, functional or organic.

Endometriosis has been indicted as a potent cause of infertility in the female. It is often amazing how even minimal lesions appear to disturb the ovulatory mechanism, particularly when bilateral ovarian implants are present. This was strongly evident in our studies of infertile women by means of transvaginal pelvioscopy. Correlation of all the data, including the basal body temperature curve and the visual evidence of external ovulation, revealed that many showed a lag in ovulation at midcycle, a syndrome to which we have applied the term asynchronous luteinization and ovulation. For example, in normally fertile women, external ovulation usually occurs within forty-eight hours after the low point of thermal shift just before the sustained rise. With endometriosis, a corpus luteum may not be evident until four to six days later, while in about 5 to 10%, thecal luteinization rather than external ovulation may occur.

Of great interest also is the polycystosis syndrome. Strikingly, more than half of these patients give an antecedent history of emotional



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*Smith, Jackson A.: Methods of Treatment of Delirium Tremens, *Journal of the American Medical Association* 152:386, May 30, 1953.

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trauma preceding the menstrual irregularity. On transvaginal pelvioscopy 2 major types were found. The first is the micropolycystic ovary which may have few to many small follicles bulging out over the surface, causing the gonad to look like a gherkin pickle. On the other hand, the small follicles may be submerged just below the surface. The scattered translucent areas give the appearance of sago seed or tapioca studding the ovarian surface.

Clinically, these women usually give a history of menses recurring at irregular, two- to six-month intervals, while the basal body temperature curve reveals a slowly rising or short luteal phase. Endometrial biopsy usually discloses an inadequate immature secretory phase. The vast majority respond to superficial psychotherapy, cyclic progesterone, and roentgen therapy.

The second type of polycystic syndrome is the enlarged ovary, 1.5 to 2 or more times normal, which on cut section resembles Swiss cheese. This is the macropolycystic type. When the ovarian tunica is thin, the gross appearance is somewhat that of an oyster. On the other hand, when the ovarian tunica is thickened and sclerotic, the gonad simulates a large goose egg.

Clinically, these women may have oligomenorrhea or secondary amenorrhea. Occasionally, a diphasic basal body temperature curve may lead one to assume external ovulation has occurred, but on transvaginal pelvioscopy, thecal luteinization is frequently seen instead.

Individuals with the macropolycystic ovaries with thin tunicae will respond to psychotherapy, cyclic progesterone, and roentgen stimulation of the anterior pituitary and ovary. Surgery is rarely, if ever, necessary. However, when a generalized sclerotic tunica is evident, bilateral ovarian resection with removal of at least 3 wedge-shaped slices is the primary line of attack as all other measures have proved unsuccessful in our hands.

Another subject of great clinical importance is the one of postoperative adhesions. Many surgeons simply cannot resist puncturing an "ovarian cyst" in the course of a laparotomy, usually for an appendectomy. On many occasions, transvaginal pelvioscopy has later revealed adhesions of omentum or bowel to right ovary and tube. It should be remembered that the liquor folliculi at certain times may be quite viscid. Release of this fluid may set up an ideal situation for adhesions.

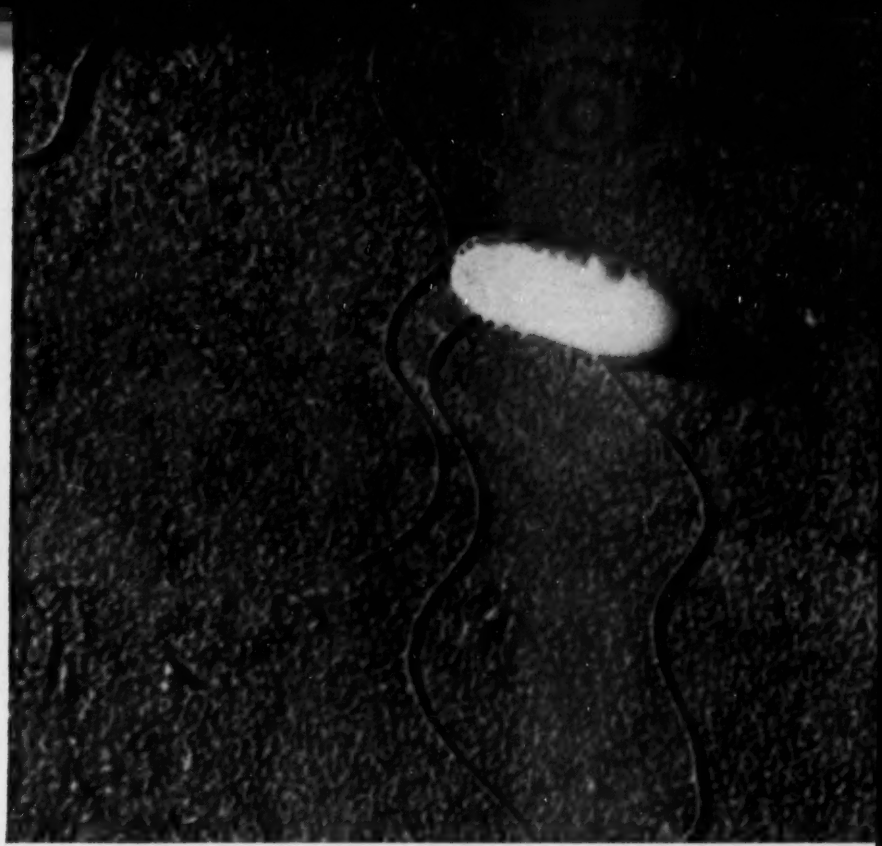
Mention should be made of an excellent method for diagnosing ovarian disturbances early. This is the very simple and extremely safe procedure of transvaginal pelvioscopy. We have performed almost 600 since 1949. About 400 have been done in the office with local anesthesia supplemented with trichloroethylene.

At present, the major indications for transvaginal pelvioscopy in the management of the infertile couple are:

1] Failure to conceive after a year of medical management

2] Previous hysterosalpingogra-

(Continued on page 178)



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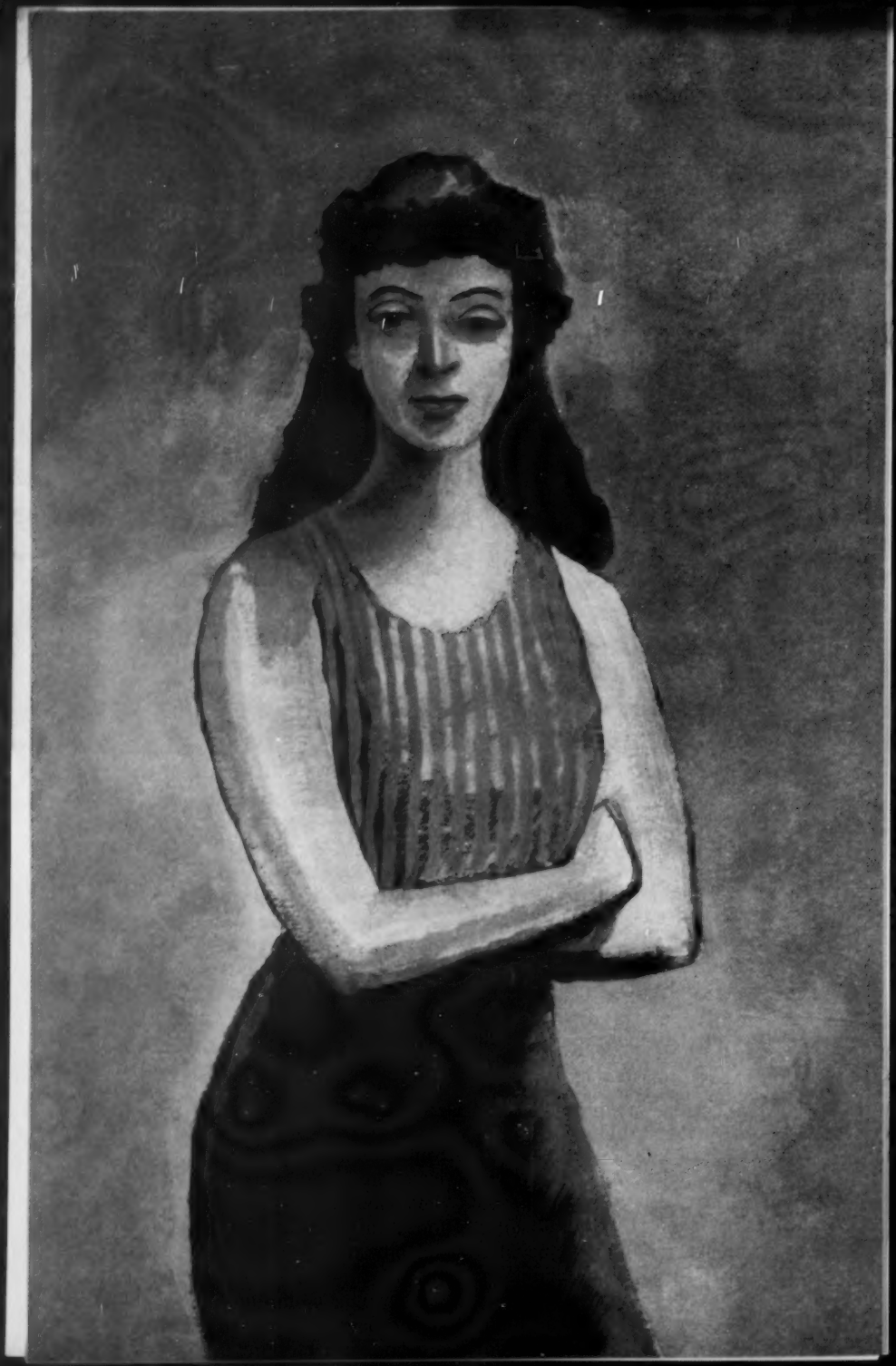

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phy, especially if an oily medium was used

3] Previous abdominal surgery

4] Further evaluation of ovarian or tubal status

5] History of suspected pelvic infection.

Dr. McGoogan is certainly to be congratulated on his fine delineation of a very complex clinical problem.

A. R. ABARBANEL, M.D.
Los Angeles

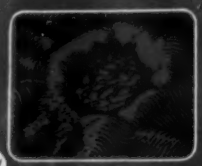
► TO THE EDITORS: Dr. Leon S. McGoogan has commented very well indeed upon the usual and classical problems of ovarian disease which one encounters. His percentages are very close to those which we accept from our own studies. Three general problems exist as our most frequent contributors to ovarian problems in infertility. These constitute roughly 10% of better than 2,000 cases of infertility.

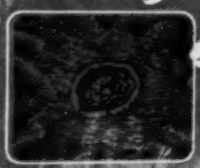
The most common cause for failure of habitual ovulation in our series is subclinical hypothyroidism. Under proper regulation of the thyroid—usually only small amounts of thyroid extract are needed—these patients achieve the average level of fertility. The basal metabolic rate still remains a reasonably accurate, simple, and inexpensive test for the patient. We endeavor to keep these patients corrected to a metabolism of between 0 and +10.

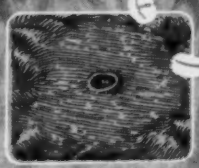
The second most common cause of infertility due to ovarian factors is thickening of the ovarian capsule, which apparently makes ovulation mechanically more difficult. This may be congenital or a result of past surgery, inflammatory disease, or simple aging of the ovary itself. We cannot as yet implicate endocrine causes. One of the phases of maturation of the ovary is the thinning of the ovarian capsule found in the preadolescent ovary as it changes into the functioning organ. In the event that the thyroid fails to pick up the quickened activity that marks the female reproductive life, this thinning of the capsule may be inhibited. We are not as clear about the pituitary activity involved. One extreme is the so-called Stein-Leventhal syndrome of bilateral polycystic ovaries. Polycystic ovaries on the basis of thickened capsules, inflammatory or operative processes, or of the second half of the reproductive cycle are less well understood. Surgical treatment ordinarily is necessary here. Occasionally, although they may regress spontaneously under observation, roentgen radiation to the pituitary and ovaries may be of value, although it carries the danger of permanent castration after the age of 35.

The final culprit in our experience has been endometriosis, which interferes with the general patterns of motility throughout the reproductive tract. Using the estrogens or androgens to inhibit ovulation will give the patient symptomatic relief but is of somewhat questionable value in the patient who wishes to become pregnant. In other words, if we delay or inhibit ovulation, not many babies will come of it. Consequently, we usually use the inhi-

Peptic Ulcer therapy







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bition routine until the patient is comfortable and the pelvis clinically quiet, then set up a timed exposure to pregnancy in an effort to achieve impregnation. If this fails and we must return to the hormones to give the patient comfort with only brief intervals of pregnancy efforts possible, it is better to attack this problem by surgery of the conservative type early rather than late.

ROBERT N. RUTHERFORD, M.D.
Seattle

Trauma and Coronary Thrombosis*

QUESTION: What is the importance of trauma in coronary thrombosis?

Comment invited from

HARRY A. DAVIS, M.D.
IRVING S. WRIGHT, M.D.
W. A. SHULLENBERGER, M.D.

► TO THE EDITORS: The relationship of trauma to coronary thrombosis is a problem which has therapeutic as well as medicolegal implications. It is often difficult to establish a causal connection between a traumatic incident and a coronary thrombosis. This is emphasized by Dr. Louis A. Kapp in his article. Two questions may arise: [1] Can trauma cause coronary thrombosis? [2] If so, what mechanisms are involved? These questions may be answered more clearly if we divide such patients into two groups.

In the first group are persons in whom coronary thrombosis has occurred after a penetrating or nonpenetrating injury of the chest. A coronary artery is directly traumatized, and thrombotic occlusion develops in the vessel regardless of the presence or absence of antecedent coronary atherosclerosis. In these patients, the chief diagnostic difficulty is the distinction between pericardial or myocardial contusion and coronary thrombosis.

In the second group are patients in whom the trauma has not directly involved the coronary arteries. The patients in this group usually have antecedent coronary atherosclerosis. It is doubtful whether trauma can ever precipitate thrombosis in a normal coronary artery by indirect effects. The ways in which these indirect effects can be exerted are of some interest. Unusual physical activity or emotional strain arising from the traumatic incident may be the initiating factors, for example, by causing an intimal hemorrhage in an atherosclerotic plaque. An important factor predisposing to coronary thrombosis in this second group is shock from trauma.

There is now general agreement that shock can precipitate coronary thrombosis and insufficiency. Persons who probably have coronary atherosclerosis, that is, those who are 50 years or older, are more susceptible than younger persons to coronary thrombosis and insufficiency as a result of shock. An episode of shock lasting as little as thirty minutes has been followed by coronary thrombosis. In general, however, the longer the duration of shock the more likely is coronary thrombosis to develop.

It would be wise, therefore, to

*MODERN MEDICINE, June 15, 1954, p. 79.

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regard as potential candidates for coronary thrombosis all persons over 50 years of age who have gone into shock after trauma. Early and effective antishock treatment should be started. This should include the administration of adequate amounts of blood, plasma, or plasma substitutes.

HARRY A. DAVIS, M.D.
Los Angeles

► TO THE EDITORS: When considering the importance of trauma in coronary thrombosis, it is necessary to define trauma. In some individuals, emotional trauma may be predominant, but this discussion will be confined to an actual blow or strain.

Direct trauma may produce an infarction on the anterior surface of the heart if the blow is to the front of the chest. It is difficult to see how such a blow would produce a posterior infarction because it would necessitate a *contra coup* type of reaction, which is difficult to conceive of in the pericardial sac. However, strain should be carefully differentiated. An excessive strain may be associated with posterior or anterior infarction. Under such circumstances, particularly if the coronary arteries are already narrowed, insufficiency and infarction may occur even without thrombosis or occlusion of the coronary artery.

If trauma is of a tremendous and crushing degree, it is possible that infarctions may occur in several areas of the heart with death. It should not be forgotten that the blow itself may produce insufficiency by increasing the cardiac work. Thus, while trauma may not directly produce an infarction, it may produce this effect secondary to the cardiac insufficiency, resulting in increased demands on excitement. The fact that an injury of the chest occurs sometime before infarction is not to be considered proof that the infarction was due to trauma rather than other factors in the natural course of the atherosclerotic process.

It should be remembered that about as many infarctions occur during the eight hours of rest as in any other eight-hour period of the day. Therefore, trauma is probably not of great statistical importance as a factor, although it may be very important to the individual.

IRVING S. WRIGHT, M.D.
New York City

► TO THE EDITORS: I respectfully remind protagonists of the theory that trauma may cause coronary thrombosis that direct proof linking injury in parts of the body other than the heart itself to thrombosis is lacking. Such evidence is eminently lacking with respect to so-called psychic trauma. One is obliged to believe that the physiologic mechanism and pathology predisposing to coronary occlusion are present before the extracardiac trauma which, at most, is a precipitating factor.

• A 49-year-old physician, presumably in excellent health, had every rib fractured by the steering wheel in a head-on automobile crash. The

head of his left femur was fractured. A left hemothorax of several hundred cubic centimeters occurred immediately. Careful physical evaluation never revealed any myocardial damage. Fleeting T-wave inversions appeared in lead III a few days after his accident but Q waves and ST deviations were never found in the electrocardiogram.

• A 42-year-old grocer became acutely paranoid after disclosure of dishonesty on the part of his business partner. While in a psychiatric hospital, where he was a well-mannered patient, he began to complain of some pains in the chest. These were not related to effort. An electrocardiogram was normal but he was sent to another institution for some studies a day later and an electrocardiogram revealed that acute anterior infarction had occurred in the interval. He recovered.

As a medical consultant to Norways Hospital, a psychiatric institution, I have seen fewer than 10 cases of acute coronary thrombosis in a period of twelve years, despite the admission of about 500 more or less disturbed cases per year. This also encompasses the fact that roughly 40,000 electroshock treatments have been administered by the staff to this same admission list of patients.

It seems to me that to settle the etiologic question which has been raised, we shall have to begin with trauma and look for its effects rather than begin with a presumed effect of trauma and formulate a relationship.

W. A. SHULLENBERGER, M.D.
Indianapolis

Cancer of the Tongue*

QUESTION: Should radiation or surgery be done for cancer of the tongue?

Comment invited from

E. W. DEMAREE, M.D.
GEORGE S. SHARP, M.D.
ROBERT L. BRECKENRIDGE, M.D.
ARNOLD J. KREMEN, M.D.
RAYMOND N. SHAPIRO, M.D.

► TO THE EDITORS: The report by Dr. Charles L. Martin on treatment for cancer of the tongue by a single method is especially valuable because the results may be more accurately compared with those obtained by other or combined methods of treatment. However, to insure the best results, therapy for each case of cancer of the tongue must be tailored to fit the condition of the individual patient. The oncologist has an advantage over the surgeon or radiologist in selecting the procedure to be used in each case.

In our hands, the primary lesion has been controlled by use of low-intensity radium needles and intraoral or external radiation in 92.3% of all cases.

Treatment of the cervical nodes should be instituted when glands are palpable. Radical neck dissection is done in all cases deemed operable.

In inoperable cases, combined treatment with low-intensity radium needles and radiation is the method of choice. This has resulted in a five-year cure in 44.4% of all cases without palpable nodes at the first examination and in 26.6% of all

*MODERN MEDICINE, June 1, 1954, p. 121.

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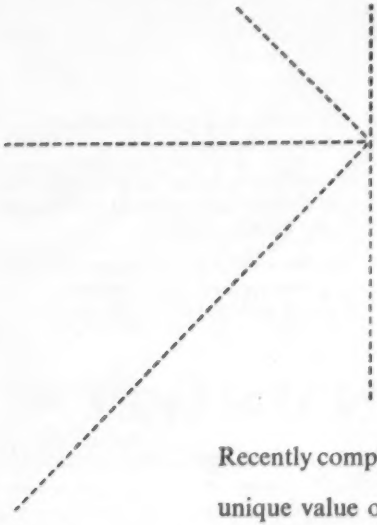
References: 1. Lee, R. I.: Chicago M. Soc. Bull.: 46:503, 1946. 2. Golob, M.: Am. J. Digest. Dis. 18:308, 1951. 3. McLester, J. S., and Darby, W. J.: Nutrition and Diet in Health and Disease, ed. 6. Philadelphia, W. B. Saunders Company, 1952, pp. 416, 476.



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1. Coles, B. L., and James, U.: Arch. of Disease in Childhood *29*:85 (1954).
2. Quilligan, J. J., Jr.: Texas State J. Med. *50*:294 (May) 1954.

Bibliography of 192 references available on request.

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cases with palpable nodes at first examination, an over-all five-year cure rate of 38%.

E. W. DEMAREE, M.D.
Pasadena, Calif.

► TO THE EDITORS: In consideration of recent advancements in radiation, surgery, and anesthesia, an evaluation of the various procedures for treatment of carcinoma of the tongue is timely.

The varied forms of cancer of the tongue may well be studied and conclusions drawn from the record of successes and failures in the past. Specific treatment technics should be based on indications of the particular clinical and pathologic type of lingual cancer encountered in each individual case. Many growths are readily amenable to radiation while others require surgery or a combination of both.

A primary growth of 3 cm. in diameter or less confined within the boundaries of the tongue may be treated by surgery or radiation. Radiation, by roentgen or interstitial radium therapy or both, is preferred because of the higher percentage of primary healings without recurrence and the better functional result. Primary lesions which have extended beyond the boundaries of the tongue and those which have become fixed to the mandible are treated most successfully by en bloc resections of portions of the tongue, mandible, and contents of the neck on the affected side. All primary lesions treated by radiation or surgery should have a radical dissection performed whether nodes are palpable or not. Since the incidence of cervical node metastases approximates 65%, neck dissections are not considered as prophylactic procedures.

The actual decision between surgery and radiation for primary growths is as much dependent upon the skill of the surgeon or therapist with these modalities as upon the individual characteristics of the growth.

During the past thirty years, radiation technics have been perfected as alternatives—if not preferred treatment—to surgery and the various cautery procedures and have raised the percentage of cures with pleasing cosmetic and esthetic improvements as well. However, with the rapid advances in anesthesia, the pendulum is swinging again toward surgery and radical block resections, with an, as yet, uncertain percentage of cure but with an unquestioned return to deformity and loss of function.

The survival rate of cancer of the tongue has increased from 25% during the 1930's to approximately 40% today, as a result of early diagnosis and improvements in radiation and surgical technics.

GEORGE S. SHARP, M.D.
Pasadena, Calif.

► TO THE EDITORS: After the diagnosis of cancer of the tongue has been established by biopsy, the next problem is investigation of enlarged cervical lymph nodes for metastases. This is best done by aspiration biopsy. The technic is relatively simple, inexpensive, and rapid

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1. Cass, L. J. and Frederik, W. S.: Malt Soup Extract as a Bowel Content Modifier in Geriatric Constipation. Journal-Lancet, 73:414 (Oct.) 1953.

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and leaves the operative field undistorted.

Small lesions of the anterior two-thirds of the tongue can frequently be destroyed by the use of interstitial radium, with or without peroral radiation. More extensive lesions in this area, particularly those on the lateral margins, are more amenable to cure by radical extirpation, usually including a hemiglossectomy, excision of the floor of the mouth, hemimandibulectomy, and radical neck dissection. A less mutilating procedure, but one which disregards the principle of en bloc dissection and, therefore, lessens the chance of a cure, is the "pull-through" method. It is similar to the former procedure except that the contour of the face is preserved and the mandible is not sacrificed. The radical surgical approach is preferred to roentgen therapy in the larger lesions, particularly when there is known cervical metastasis.

Lesions occurring at the base of the tongue are generally treated with external deep x-radiation with or without radon seeds. The necessity for radical neck dissection is even more imperative in these tumors since 80% have been shown to have cervical metastasis.

A more difficult decision to make is whether bilateral neck dissections should be performed when nodes on both sides of the neck are involved or when cross-metastasis occurs. The chances of cure in the majority of such cases are greater with the bilateral neck dissection.

When there is a contraindication for performing a radical neck dissection in patients with known cervical metastases, the latter are treated with local, external, deep irradiation with or without interstitial radium applied directly into the palpable lymph nodes.

ROBERT L. BRECKENRIDGE, M.D.
Philadelphia

► TO THE EDITORS: Therapy for cancer of the tongue is poorly standardized. Because of general dissatisfaction with ultimate cure rates resulting from radiation therapy, which was the most widely used method until recent times, surgeons interested in the problem have become more aggressive and today have devised technics whereby classical concepts of cancer surgery—en bloc excision of the primary area of growth in continuity with area of lymphatic drainage—can be applied to cancer of the mobile portion of the tongue.

Metastasis from cancer of the tongue to the cervical lymph nodes occurs in at least 60% of cases. When the cancer is confined to the tongue and the cervical lymph nodes are clinically normal to palpation, microscopic studies show a 40% lymph node involvement by metastatic cancer. These observations, confirmed in a number of medical centers, strongly support the thesis that all patients with cancer of the tongue should have a complete neck dissection as part of the over-all plan of management. Since dissection can be done in continuity with resection of the primary growth, this would appear to be the preferable method of management for such patients.

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My own experience utilizing such a plan of management has been quite gratifying to date and suggests continued application of this plan of therapy. Final conclusions cannot as yet be assembled but, of 19 cases treated as described above, 68% are alive and free of disease one to five years postoperatively.

ARNOLD J. KREMEN, M.D.
New York City

► TO THE EDITORS: There is no really satisfactory method for treating carcinoma of the tongue. No modality or combination of modalities gives cure rates in carcinoma of the tongue which are comparable to those obtained in the treatment of carcinoma of the lip or of the skin of the face.

We believe that interstitial radiation of the primary lesion provides as good control as does radical surgery, with somewhat less hazard and less disability. For this reason, interstitial radiation is considered the method of choice for the primary lesion.

Most radiotherapists and oncologists in this area do not believe that external radiation can arrest the progress of cervical lymph node metastases. Furthermore, it is impossible to know the nature of cervical lymphadenopathy without histologic study. Node biopsy using proper surgical technic should not disseminate the tumor and is at least as safe as blind needle biopsy.

Extensive radiotherapy to the neck greatly increases the technical difficulty of block dissection and increases the incidence of postoperative necrosis and poor healing. Interstitial radiation of the cervical nodes without pathologic control is inconclusive evidence of the efficacy of the method. Reliance upon the palpability of nodes with metastatic disease is notoriously unsafe and misleading. If there is any suspicion of tumor deposit in the cervical lymphatic chain, no procedure short of complete ablation of this drainage field can be considered adequate.

We believe that surgery is the treatment of choice for neck node metastases and should not be reserved for radiotherapeutic failures. Indeed, we believe that radiotherapy of metastatic deposits in the neck should be reserved for the palliation of surgical failures.

RAYMOND N. SHAPIRO, M.D.
Brooklyn

"Doctor says I have to have complete bed rest."

These are the Gantrisin advantages —

Gantrisin 'Roche' is a single, soluble, wide-spectrum sulfonamide -- especially soluble at the pH of the kidneys. That's why it is so well tolerated...does not cause renal blocking...does not require alkalies. Produces high plasma as well as high urine levels. Over 250 references to Gantrisin® in recent literature.

—and these are the reasons for Gantricillin

It provides Gantrisin PLUS penicillin...for well-tolerated, wide-spectrum antibacterial therapy...in tablets of two strengths -- Gantricillin®-300 for severe cases; Gantricillin (100) for mild cases -- and in an easy-to-take suspension for children -- Gantricillin (acetyl)-200

'Roche.'

Diagnostix

Here are diagnostic challenges presented as they confront the consultant from the first clue to the pathologic report. Diagnosis from the Clue requires unusual acumen and luck; from Part II, perspicacity; from Part III, discernment.

Case MM-276

THE CLUE

ATTENDING M.D: A 53-year-old woman was admitted to the emergency ward last night with right hemiplegia, right homonymous hemianopsia, and aphasia. She was perfectly well until six days ago. At that time she had fever, chills, and a productive cough with rusty sputum and was vomiting intermittently. She was given penicillin at home. Suddenly, yesterday morning, she became progressively drowsy. She responded to painful stimuli on the left side only, and right hemiplegia became evident in the next few hours. Her temperature was 104° F. When she arrived at the hospital, she was unresponsive and incoherent. She was apparently unable to see to the right, for she seemed to move only when objects or flashing light were brought into the field of vision from the left.

VISITING M.D: Onset like lobar pneumonia, followed by focal cerebral signs. And . . .?

ATTENDING M.D: Positive Kernig sign, stiff neck, and positive Lasègue sign bilaterally. Spinal fluid showed an initial pressure equivalent to 220 mm. of water, 7,000 white blood cells, 89% polymorphonuclears. Total protein over 1,000 mg. per 100 cc., chlorides 102 mEq. per liter, and sugar content 37 mg. per 100 cc. Colloidal gold curve was all 5's. The Hinton test of spinal fluid and the direct smear for bacteria in the spinal fluid were both negative.

PART II

VISITING M.D: With the low chlorides and low sugar, we can be sure she has bacteria in the spinal fluid. This is a severe bacterial meningitis with a focal left parietal brain lesion.

ATTENDING M.D: She is receiving streptomycin and penicillin now.

VISITING M.D: Any pertinent past history?

ATTENDING M.D: For many years the patient had some "chest trouble" but had never consulted a physician. One year ago she had what

is described as an attack of bronchopneumonia. She has had repeated episodes of what the family calls "the flu" for three or four years.

VISITING M.D: *(Examining patient, who is obviously moribund)* She has extreme clubbing of the fingers, indicating longstanding pulmonary trouble—probably bronchiectasis. The pupils react to light. The Kernig sign is strongly positive. Eye movements to the left are normal, but movement to the right is impaired and there is lack of conjugate movement. She has right facial palsy and right hemiplegia with a right positive Babinski phenomenon. The heart is not unusual; petechiae are not observed and the spleen is not enlarged. Any red cells in the urine?

ATTENDING M.D: No.

VISITING M.D: We really need to know the results of sputum and spinal fluid cultures. I presume you have a chest roentgenogram?

ATTENDING M.D: Yes, but it is a bedside picture with a portable machine and not very satisfactory. There is a hazy increased density in the left upper lobe, an irregular soft-tissue density adjacent to the hilum in the region of the left upper lobe bronchus, and a small amount of pleural fluid. The heart is of normal size.

VISITING M.D: The patient has something within the substance of the brain which has ruptured into the meningeal space. I wonder what the source of this is—presumably an embolic lesion. Was there any history suggestive of middle ear infection or nasal sinus involvement?

ATTENDING M.D: No, not that we know of. Otoscopic examination is normal.

PART III

ATTENDING M.D: *(Next day)* The cultures of the sputum grew nonspecific gram-positive and gram-negative cocci. The spinal fluid grew *Staphylococcus albus* and *Bacillus subtilis*. The throat culture showed abundant alpha hemolytic streptococci and slight catarrh.

VISITING M.D: The throat organisms are common and mean nothing. But *B. subtilis* is a contaminant and casts doubt upon the meaning of the staphylococcus. We don't know the real infecting organism. Subacute bacterial endocarditis rarely produces an actual metastatic brain abscess, and, with no embolic phenomena elsewhere or any loud systolic murmur, we can discount this condition, along with acute bacterial endocarditis which is much more apt to produce brain abscess. I don't think we have to consider cancer of the lung from a practical point of view.

ATTENDING M.D: What do you make of the clubbing of the fingers?

PART IV

VISITING M.D: I was coming to that. It is the major clue. This woman probably has bronchiectasis and a lung abscess which spread to the brain, where the abscess broke through the cortex.

ATTENDING M.D: Repeated pneu-

ELECTRON PHOTOMICROGRAPH

Streptococcus faecalis 30,000 X

Streptococcus faecalis is a Gram-positive organism commonly involved in a variety of pathologic conditions, including urinary tract infections subacute bacterial endocarditis • peritonitis.

It is another of the more than 30 organisms susceptible to

PANMYCIN*

TETRACYCLINE HYDROCHLORIDE

100 mg. and 250 mg. capsules

Upjohn

*TRADEMARK, REG. U.S. PAT. OFF.

monias are more apt to point to bronchiectasis than an abscess.

VISITING M.D: True, but we have a density to account for, and abscesses with bronchiectasis are not uncommon.

ATTENDING M.D: We repeated the spinal fluid today and the pressure is unchanged—white cells 3,000 and protein 200 mg. per 100 cc.; sugar and chlorides are slightly up.

ATTENDING M.D.: *(Four days later)* The spinal fluid is now clear and there is only 110 mg. of protein, but the patient is near death. *(The patient expires as they are examining her.)*

ATTENDING M.D: *(One week later)* The anaerobic cultures grew a pure culture of *Bacteroides*. This is quite unresponsive to antibiotics. The autopsy showed a large abscess filled with greenish pus occupying the left parietal lobe; it had ruptured into the ventricle.

VISITING M.D: The important lesson in this case is that from the moment we saw the woman she was moribund and too ill to be operated upon. Had she been hospitalized at once and had a very careful neurological examination been performed, the abscess might have been detected, especially with the aid of an electroencephalogram. Surgery could have been performed.

ATTENDING M.D: But, with the offending organism not sensitive to antibiotics, she probably would have died anyway.

VISITING M.D: Perhaps, but in some ways she was responding to the regimen as indicated by the spinal fluid changes. Had surgery preceded the rupture she might have had a chance.

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80% fail to sustain weight loss after the diet.*

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AM PLUS is dextro-amphetamine plus 19 important vitamins and minerals. It helps rehabilitate post-dieting habits while augmenting nutritional intake.

**Aaron, H.: Weight Control, Consumer Reports 17:100 (Feb.) 1952.*

POERIC Rx

Chicago 11, Illinois

FROM ABROAD

FRANCE

Hypertrophy of the Parotid Glands. Enlargement of the parotid glands is common in patients with alcoholic cirrhosis and may be seen in alcoholic persons without evidence of liver damage. Careful examination frequently reveals bilateral symmetric enlargement, states Dr. M. Bonnin of Paris.

On palpation, the gland appears firm and elastic; no changes are found in the parotid duct or buccal orifice. Biopsies reveal hypertrophy of the functioning elements and signs of secretory exhaustion. Cells are found in the zymogenic, serous, and mucous stages.

Changes in the interstitial tissue of the gland are slight. Amylase determinations of secretions collected from Stensen's duct show increased activity.

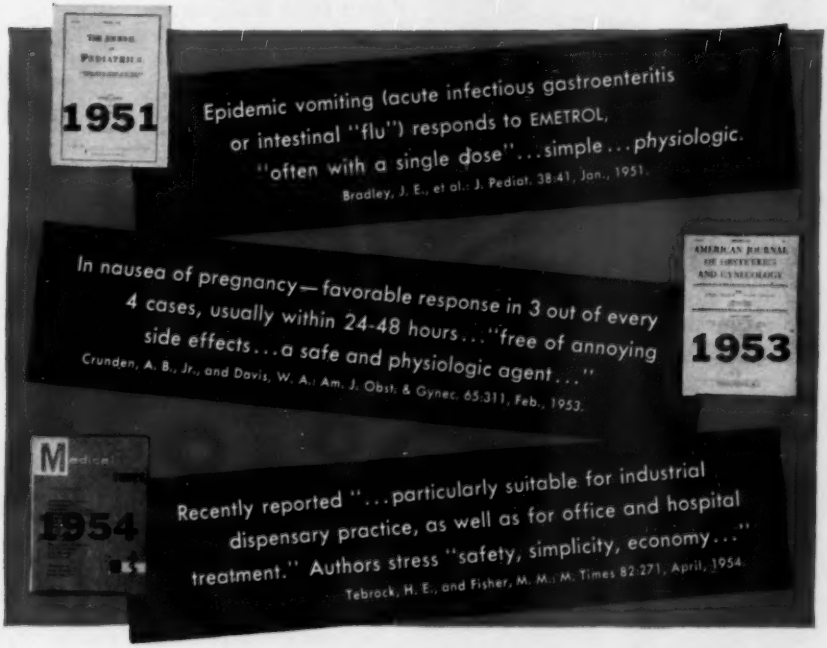
Bull. Acad. nat. méd. 138:322-324, 1954.

FRANCE

Cancer of the Bladder. Smears prepared from urinary sediment often aid diagnosis of epithelioma of the bladder when biopsy and cystoscopic examination cannot be performed easily. Drs. P. Aboulker

THE EVIDENCE...

original and confirmatory



WHY EMETROL WORKS EMETROL quickly relaxes smooth muscle, reduces rate and amplitude of contractions, and is effective in direct ratio to the amount used.

Levenstein, I.: Report of Lehrer Laboratories, Roselle Park, N. J.

EMETROL®

(Phosphorated Carbohydrate Solution)

for rapid physiologic control of nonorganic nausea and vomiting

CAUTION: EMETROL must be taken *undiluted.* Forbid oral fluids of any kind for at least 15 minutes after each dose.

Available through all pharmacies in bottles of 3 fl.oz. and 16 fl.oz.

Literature and sample on request

Kinney & Company, Inc. Columbus, Indiana

and J. Chomé of St. Louis Hospital, Paris, report that examination of urinary smears revealed 30 cases of bladder cancer among 850 patients screened. A negative smear is not considered indicative of freedom from malignancy.

J. urol., Paris 60:220-236, 1954.

FRANCE

Operation for Glaucoma. Filtration scar operations are often effective in the treatment of glaucoma, according to Dr. Jean Sédan of Marseille after a review of 262 patients. Normal intraocular tension was attained in 213 patients; no further visual impairment occurred in 171; and visual acuity improved in 42. An increase in the visual field was also observed in some patients. Retinal pressure readings showed regular retinal-systemic pressure relationships.

Ann. ocul. 187:409-419, 1954.

FRANCE

Osteomyelitis of the Maxilla. The space of the maxillary sinus is usually occupied by spongioid bone in the newborn infant, reports Dr. Paul Bonnet of Lyon. Osteomyelitis may occur in the first weeks of life as a result of hematogenous or gum infection or mastitis in the nursing mother.

The acute febrile disease is accompanied by vomiting, diarrhea, anorexia, and convulsions. Unilateral swelling of the face and periorbital region precedes involvement of the orbit.

Differentiation from panophthalmia or retrobulbar phlegmon is often difficult. Examination of the eye shows involvement of the conjunc-

A New Cough Preparation little patients really like—

(and its high gastric tolerance repays their confidence!)

Vicks Medi-trating Cough Syrup is a new non-narcotic cough mixture with specialized characteristics designed to produce relief of coughs of colds by two mechanisms. It works direct by coating and soothing the irritated membranes to relieve coughs originating in the throat area. Containing Cetamium (Vick brand of cetylpyridinium chloride), the mixture has increased spreading and penetrating properties which enhance its local antitussive action.

Containing two effective expectorants—ammonium chloride and sodium citrate—it produces rapid non-irritating action. It has a high degree of gastric tolerance and palatability which makes it acceptable to both adults and children.

Active Ingredients: Sodium Citrate, Ammonium Chloride, Glycerin, Cetamium (Vick brand of cetylpyridinium chloride) in a pleasantly flavored syrup containing Eucalyptus, Menthol, Camphor, and other Vick aromatics.

VICKS
MEDI-TRATING
COUGH SYRUP

Made by the makers of Vicks VapoRub

tiva only. Rhinoscopic examination may reveal pus on the affected side.

The condition may be treated with antibiotics and curettage. Good drainage must be established in advanced cases.

Arch. ophth. 14:343-351, 1954.

GREECE

Reticuloendothelial System Function. The metabolism of alcohol takes place primarily in the reticuloendothelium; after administration of a standard dose of alcohol, blood levels will reflect the functional status of the system.

Drs. S. Livieratos, E. Danopoulos, and K. Maratos of the University of Athens find that with malnutrition the elimination of alcohol from the circulation is slow and, in cases of hunger edema, the activity of the reticuloendothelial system is even further depressed. Parenteral feeding should not be given to such patients.

Repeated alcohol response curves facilitate observation of changes in activity during therapy.

Acta med. scandinav. 148:469-476, 1954.

GREECE

Tuberculous Meningitis. Oral doses of isoniazid are often more effective than intrathecal streptomycin for tuberculous meningitis, report Dr. N. Oeconomopoulos and associates

Pocket-Size Hb-Meter

Join the thousands of doctors who use AO Hb-Meters to avoid needless delay in determining hemoglobin concentration. Determinations may be conveniently performed at the bedside in less than three minutes. A single drop of blood is placed on the glass chamber and agitated with a hemolysis applicator. Once hemolysis is complete, the chamber is inserted in the Hb-Meter, and the hemoglobin concentration read directly from the graduated scales on the instrument. No dilutions or volumetric measurements necessary... sources of error minimized... laboratory accuracy achieved *consistently.*

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"Bright Line" Haemacytometer

First choice of physicians — for accurate results, ease in counting. Cells are clearly visible on the dark metallized surface of the AO "Bright-Line" Counting Chamber. New extra-long plateaus are easier to fill. Made of durable "Pyrex" with a concavity under the ruled areas to prevent scratching and to prolong the useful life of the chamber.

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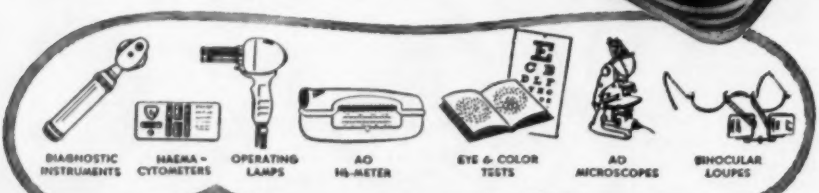
CHOICE OF POCKET-SIZE CASES

- Standard — compact, semi-flexible polyethylene case, resistant to laboratory reagents.
- Deluxe — plush lined metal base case, finished in red leatherette.



AMERICA'S FIRST NAME IN OPTICAL INSTRUMENTS FOR MEDICINE

of the University of Athens. High concentrations enter the spinal fluid, but hydrocephalus does not result.

Remissions persisted during observation periods in patients who recovered completely and the only unfavorable reaction in improved patients was occasional slight mental disturbance.

Dis. Chest 26:268-272, 1954.

AUSTRIA

Serum and Urine Changes with Mumps. Diastase levels in blood and urine increase greatly during the first period of mumps, states Dr. E. Hausmann of Wilhelminen Hospital, Vienna. The diastase test is valuable for establishing the early diagnosis of mumps and for differentiation from inflammatory lesions of the regional lymph nodes, periostitis, and other soft tissue pathology about the face.

The appearance of complications such as orchitis or meningoencephalitis does not exert further influence on the diastase levels, thus indicating that the latter are related mainly to the process in the parotid gland.

Arch. Kinderh. 148:135-146, 1954.

AUSTRIA

Hepatitis during Pregnancy. Diaplacentar transmission of infectious hepatitis or homologous serum

Ease of application

Transparency

Flexibility and

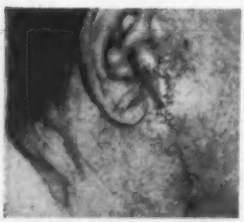
Minimal redressing

distinguish

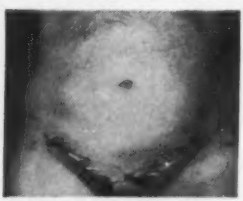
AEROPLAST®

LIQUID SURGICAL DRESSING

Sprayed directly onto the lesion from an aerosol "bomb," Aeroplast forms a protective plastic film dressing over any body contour. Aseptic lesions remain sterile as long as the dressings are intact. Aeroplast dressings are impermeable to bacteria. To remove, Aeroplast is simply peeled off.



Face laceration dressed with Aeroplast healed in four days.[2]



Bilateral inguinal hernia incisions protected by Aeroplast 4th post-operative day.[1]

Aeroplast dressing is peeled off like a glove 12 days after 2nd degree burn.[2]

Rigler and Adams[1] dressed 110 operative wounds (including thoracotomies, laparotomies, inguinal hernias and miscellaneous lesions) with Aeroplast. "A single application sufficed in all but fifteen cases. No instances of systemic or clear-cut reactions were observed. Satisfactory results, with no evidence of erythema, infection, or necrosis were obtained in the majority of cases."

In 39 miscellaneous wounds dressed with Aeroplast (including appendectomies, open reduction of fractures, skin graft donor sites, lacerations, excoriation), Choy[2] reports infection in only one case, which promptly cleared with redressing, and uneventful healing in all others.

1. Rigler, S. P. and Adams, W. E.: Experience with a new sprayable plastic as a dressing for operative wounds, Surg. 36:792 (Oct.) 1954. (University of Chicago Clinics, Chicago, Surgical Service).

2. Choy, D. S. J.: Clinical trials of a new plastic dressing for burns and surgical wounds, Arch. Surg. 68:33 (Jan.) 1954. (Bellevue Hospital, New York, Third Surgical Division—Dr. John Mulholland, chief).

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432 DELLROSE AVENUE, DAYTON 3, OHIO

jaundice is uncommon, state Dr. H. Ellegast and associates of the University of Vienna.

Of 57 cases of infectious hepatitis and homologous serum jaundice in pregnant women, only 1 instance of intrauterine infection of the fetus was observed; 2 infants were stillborn and 4 others died soon after birth, but none had jaundice. The 50 living infants showed no signs of liver disease.

Wien. klin. Wchnschr. 66:507-511, 1954.

AUSTRIA

Injuries of Large Arteries. Pendiomid, a ganglion blocking agent, prevents vascular spasm in crushed arteries, thus improving the blood supply.

Dr. Horst Kurt Leonhardt of Loeben administered the preparation to 9 patients with crush injuries or fractures of the extremities. Circulation was preserved in the extremities and posttraumatic swelling and pain were reduced. No evidence of necrosis was seen.

Orthostatic hypotension can be avoided by placing the patient in a horizontal position soon after the drug is injected.

Wien. klin. Wchnschr. 66:303-304, 1954.

AUSTRIA

Biliary Diseases in Old Age. The incidence of diseases involving the biliary tract increases after the age of 65. Dr. Paul Moritsch of City Hospital, Wien-Lainz, states that gallstones are found at autopsy in about 50% of persons over 60 years of age.

Conservative treatment should be tried before surgery is contemplat-

(Continued on page 210)

SQUIBB ANNOUNCES TWO IMPORTANT

THE FIRST
antifungal antibiotic
MYCOSTATIN

SQUIBB NYSTATIN

Highly effective for prevention and treatment of intestinal moniliasis

The intestinal flora of patients treated with oral antibiotics, particularly the broad spectrum preparations, undergoes profound changes. In many cases there is a strong overgrowth of Candida (monilia), and the extent of overgrowth seems to be proportional to the amount of the antibiotic taken. This phenomenon does not necessarily lead to clinical moniliasis, but a considerable number of patients with an overgrowth of Candida have intestinal symptoms, including diarrhea, ulceration, anal fissure, and persistent pruritus.

When such effects are due to Candida, they can be prevented by Mycostatin. Established monilial infection of the gastrointestinal tract can be cleared up by Mycostatin in 24 to 48 hours.

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Dose: 500,000 units t.i.d.; to be doubled if intestinal fungi are not suppressed. Mycostatin is well tolerated by nearly all patients, and is compatible with the commonly used antibiotics.

500,000 unit tablets
Bottles of 12 and 100

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STECLIN

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Squibb Tetracycline Hydrochloride

Steclin is the newest broad spectrum antibiotic.

- **Fewer side effects, better tolerated than oxytetracycline or chlortetracycline.**
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50 and 100 mg. capsules
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SQUIBB

The range of clinical usefulness of Steclin is similar to that of oxytetracycline and chlortetracycline. It is often superior to its analogs because therapeutic blood levels are achieved with fewer gastrointestinal side effects.

As with all broad spectrum antibiotics, overgrowth with nonsusceptible organisms, particularly monilia, may occur.

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ed. However, the symptoms of acute cholecystitis or biliary obstruction often simulate ileus or peritonitis, both of which require immediate surgery. Acute uncomplicated cholecystitis in a poor-risk patient is best treated by cholecystostomy under local anesthesia. Cholelithiasis and chronic recurrent cholecystitis with icterus are treated conservatively.

Wien. klin. Wchnschr. 65:927-930, 1953.

FINLAND

Enuresis in Children. Disturbances of the central nervous system are of more etiologic significance in enuresis than personality disorders or conflicts, according to Drs. Yrjö Temmes and Erkki Toivakka of the University of Helsinki. Electroencephalograms were made in 54 enuretic children from 3 to 16 years of age. Paroxysmal dysrhythmias or epileptic potentials were noted in about 70% of the patients. Only 11 children had no electroencephalographic changes.

Acta paediat. 43:259-263, 1954.

ITALY

Platelet Extracts. An important action of platelets in hemostasis is the promotion of capillary constriction at the points of injury. Similarly, serotonin, a vasoactive extract of serum, is believed to originate from the platelets that remain in the serum fraction of whole blood after centrifugation. Drs. Mario Bracco and Pier C. Curti of the University of Siena have now established the identity of the two principles.

Extracts of sheep and rabbit platelets were found to be identical with serotonin by combined spectrophotometry and paper chromatography. Fractions prepared the same way from human and canine platelets could not be identified.

Haematologica 37:721, 1953.

ALGERIA

Hemolytic Anemia from PAS. Oral administration of standing solutions of ascorbic acid and PAS may cause collapse, cyanosis, dyspnea, bilirubinemia, and severe anemia in children. One child died twenty-four hours after the onset of acute symptoms.

Dr. Jean Castanier and associates of Oran caution against the use of such solutions unless freshly prepared, because exposure to light and heat causes decomposition with appearance of free phenol bodies.

Arch. franç. pédiat. 11:380-387, 1954

ALGERIA

Placenta Previa. The mortality rate in placenta previa is apparently directly related to the time elapsed between the first symptoms and the institution of treatment.

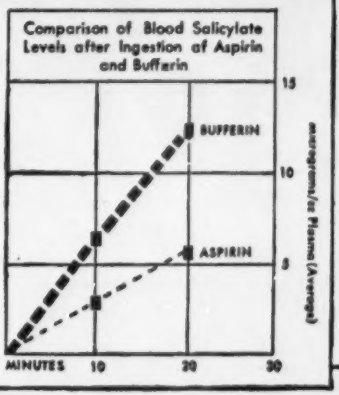
Drs. M. Bonafos, M. Serfati, and R. Le Cannelier of the University of Algiers report 65 cases of placenta previa hospitalized during the last two years. The over-all mortality was 54%; 31 of the infants were stillborn, and 4 others died during the first six days of life. The main causes of death were prematurity, obstetric trauma, and anoxia.

Bull. Féd. soc. gynec. et obst. 5:436-437, 1953.

Faster Pain Relief with BUFFERIN®

1 ACTS TWICE AS FAST AS ASPIRIN

The antacids in Bufferin speed its pain-relieving ingredients through the stomach and into the blood stream. Actual chemical determinations show that within ten minutes after Bufferin is ingested blood salicylate levels are higher than those attained by aspirin in twice this time.[1]



2 DOES NOT UPSET THE STOMACH

Bufferin's antacid ingredients protect the stomach against aspirin irritation. This has been clinically demonstrated on hundreds of patients.

In usual doses

In a series of 238 cases, 22 had a history of gastric distress due to aspirin but only one reported any distress after taking 2 Bufferin tablets (equivalent to 10 grains of aspirin).[1]

In large doses

In a recent study group, 1006 patients received, over a 24 hour period, 12 Bufferin tablets (equivalent to 60 grains of aspirin). Although 72 had a history of being sensitive to aspirin, only 18 reported any gastric side-effect with Bufferin.[2]

1. Effect of Buffering Agents on Absorption of Acetylsalicylic Acid. J. Am. Pharm. Assoc., Sc. Ed. 39:21, Jan. 1950
2. Gastric Tolerance for Aspirin and Buffered Aspirin. Ind. Med. 20:630, Oct. 1951

INDICATIONS: Simple headaches, neuralgias, dysmenorrhea, muscular aches and pains, discomfort of colds and minor injuries. Particularly useful when gastric hyperacidity is a complication. Useful for relieving pain in the treatment of arthritis.

EACH BUFFERIN TABLET contains 5 grains of acetylsalicylic acid, together with optimum amounts of the antacids aluminum glycinate and magnesium carbonate.

AVAILABLE in vials of 12 and 36 tablets and in bottles of 100. Tablets scored for divided dosages.

Bristol-Myers Co., 19 West 50 St., New York 20, N. Y.

GERMANY

Muscle Cramps in Obstetric Patients. Calf cramps that occur in pregnant, parturient, and postpartum patients are relieved by daily oral administrations of riboflavin, reports Dr. H. O. Kleine of City Hospital, Ludwigshafen.

Good results are believed to be due to improved carbohydrate metabolism, especially of the phases involved in muscular contraction.

Zentralol. Gynäk. 76:344-356, 1954.

GERMANY

Therapy for Diabetes. Oxypropiophenon, a stilbestrol-related compound, decreases pituitary hyperactivity and is therefore useful in the management of pituitary diabetes.

Dr. Bernt Sachsse of the Academy of Medicine, Düsseldorf, used the compound in 25 patients with diabetes believed of pituitary origin. Most of the patients were on controlled diets and insulin intake. In 20 patients, the fasting blood sugar levels and daily blood sugar curves were lowered. In many patients, the insulin tolerance was decreased, and the daily insulin dose was reduced.

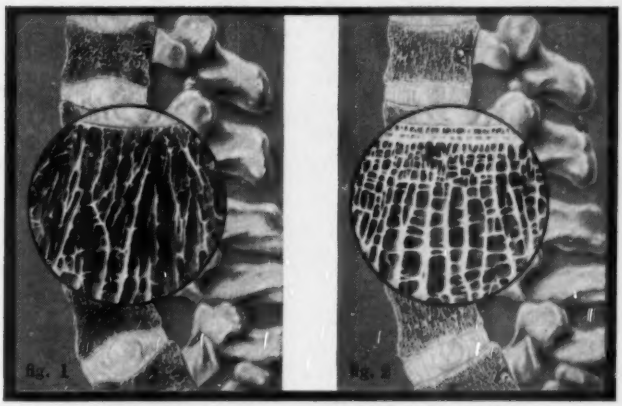
Med. Klin. 49:1254-1257, 1954.

GERMANY

Delayed Sequelae of Poliomyelitis. Massive atrophy of large muscle groups of the thigh has been observed in patients with previous anterior poliomyelitis after relatively minor physical trauma to the spine or amputation below the knee.

The cause of the phenomenon

AGING CHANGES THE BONE PICTURE



lumbar vertebrae, magnified sagittal sections

The vital role that estrogen and androgen play in the preparation and recalcification of bone matrix readily explains why declining sex hormone production which accompanies aging is most frequently the cause of osteoporosis. Note typical atrophic changes characteristic of postmenopausal osteoporosis (fig. 1) in contrast to normal bone matrix (fig. 2). Reifenstein* is of the opinion that some degree of osteoporosis is almost "physiologic" after the menopause, and that clinical osteoporosis may be found in about 10 per cent of women over 50 years of age.

With combined estrogen-androgen therapy, "pain in the spine and other bones is relieved considerably or completely in a matter of weeks to months," and with extended periods of treatment, the prognosis for bone recalcification is good.*

Combining both estrogen and androgen, "Premarin" with Methyltestosterone provides a dual approach for maximum efficiency in treating osteoporosis. A brochure outlining full details of therapy is available at your request.

*Reifenstein, E. C., Jr., in Harrison, T. R.: Principles of Internal Medicine, Philadelphia, The Blakiston Company, 1950, p. 655.

"Premarin" with Methyltestosterone is supplied in two potencies: the *yellow* tablet (No. 879) contains 1.25 mg. of conjugated estrogens equine and 10 mg. of methyltestosterone; the *red* tablet (No. 878) contains 0.625 mg. and 5 mg. respectively. Both potencies are available in bottles of 100 and 1,000 tablets.

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5422

is unknown, reports Dr. Johannes Hirschmann of the University of Tübingen, but poliomyelitis is usually the only neurologic condition revealed after careful inquiry and neurologic examination have been carried out. This condition may be misdiagnosed as muscular atrophy or dystrophy.

Arch. Psychiat. 190:584-593, 1953.

GERMANY

Brief Narcosis. Baytinal is particularly suitable for anesthesia of ambulatory patients, report Drs. H. Weese and F. H. Koss of the Medical Academy, Düsseldorf. Minor surgery, requiring no more than ten minutes, is performed without other preoperative or supplementary drugs.

If oxygen is given simultaneously, inadvertent overdosage does not result in cardiac embarrassment or hypotension.

Muscle relaxation is augmented by simultaneous administration of succinylcholine. Ether can be given after Baytinal induction if desired.

After operation, the patient is able to leave the operating table without assistance and after half an hour can return home alone. The patient experiences a slight euphoria and therefore should not drive a car during the day of operation.

The anesthetic is not recommended for children.

Deutsche med. Wchnschr. 79:601-604, 1954.

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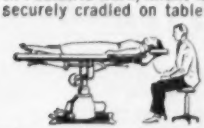
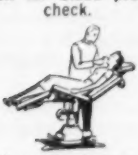


Universal Table in horizontal position with arm board extension for blood pressure check.



"Contour Chair" position with patient comfortably relaxed for nose and throat examination.

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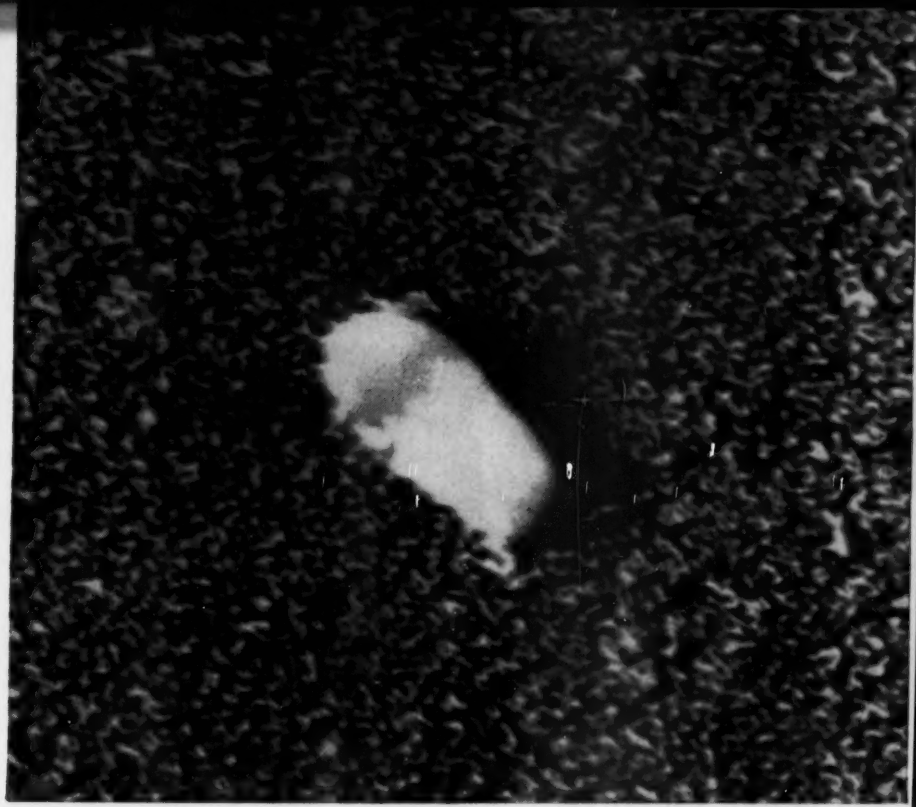

ELECTRON PHOTOMICROGRAPH

Klebsiella pneumoniae 29,000 X

Klebsiella pneumoniae (Friedländer's bacillus) is a Gram-negative capsulated organism commonly involved in various pathologic conditions of the nose and accessory sinuses, in addition to bronchopneumonia and bronchiectasis.

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BASIC SCIENCE *Briefs*

Hepatology

Hormones and Cirrhosis

Malnutrition associated with hepatic cirrhosis may cause gonadal atrophy and deficiency. However, Drs. Salvador Zubiran and Bernardo Sepulveda of Mexico City report that endocrine dysfunction can be remedied by a high-protein diet. As the nutritional and hormonal states improve, the estrogen values are temporarily elevated, but the rise apparently has no direct relationship to the functional capacity of the liver.

Metabolism

Blood Cholesterol Reduction

Soybean sterols interfere with absorption of cholesterol. The plant product apparently inhibits esterification by competing for the pancreatic esterase, bile salts, and fatty acid necessary for assimilation, though plant sterols are not absorbed, even when esterified. Dr. Leon Swell of the Veterans Administration Center, Martinsberg, W. Va., and associates found that the addition of 4% soybean sterols to a rat diet that ordinarily produces high levels of blood cholesterol held the total blood cholesterol in three weeks to 142 mg. per 100 cc., in contrast to 353 mg. without soybean supplement.

Proc. Soc. Exper. Biol. & Med. 86:295-298, 1954.

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Shading indicates correct pressure pattern of Bauer & Black Elastic Stocking.

Physiology

Blood Flow and Temperature

Rate of volume blood flow through the peripheral skeletal muscles of dogs is increased by microwave irradiation when the induced tissue temperature exceeds 44° C. Beginning with an initial rate of 42 cc. per minute at about 33.8° C., the blood flow accelerates rapidly after the critical temperature is reached and continues to rise to a peak flow of 78 cc. per minute during the first five minutes after irradiation, reports Dr. Alfred W. Richardson of Indiana University, Bloomington. After a sufficient acceleration of blood flow, muscle temperature stabilizes at about 46.2° C.

Am. J. Phys. Med. 33:103-107, 1954.

Gastroenterology

Gastric Acid Inhibitor

The sulfonamide Diamox, a carbonic anhydrase inhibitor, reduces secretion of hydrochloric acid in the stomach. In about 200 tests on patients with duodenal ulcers, Drs. E. Clinton Texter, Jr., and Clifford J. Barborka of Chicago have observed the effects of Diamox and the anticholinergic agents Pathilon and Pro-Banthine alone and in combination. All of the drugs reduce hydrochloric acid, but only Diamox inhibits acid without affecting the volume of gastric secretion. The carbonic anhydrase system is apparently an important factor in production of hydrochloric acid.

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short REPORTS

Gynecology

Menopausal Symptoms

Vasomotor reactions of the menopause may be relieved by the pituitary luteinizing hormone. Dr. Arthur A. Hellbaum and associates of the University of Oklahoma, Oklahoma City, report that these symptoms are usually associated with low LH values in blood and urine, while the follicle-stimulating hormone is increased. In 36 women treated for severe complaints after oophorectomy, vasomotor distress was alleviated by LH alone, by preparations containing both LH and FSH, or by chorionic gonadotropin, but not by FSH only.

Gastroenterology

Bowel Uptake of B_{12}

Like iron, vitamin B_{12} is absorbed by the intestines on the principle of partial mucosal block. Dr. George B. Jerzy Glass and associates of Flower and Fifth Avenue hospitals, New York City, find that the peak of efficiency is 90 to 40% at dosages of 0.5 to 2 μg., with utilization rapidly decreasing to 3% with 50 μg., or even less with larger dosages. Uptake is completely blocked by pernicious anemia and sprue, but this can be corrected in anemia if intrinsic factor is administered. The function cannot be restored in sprue, since the bowel wall itself is defective.

"But Doctor, can't you put some weight on her?"

'Trophite'—a high potency combination of B_{12} and B_1—can help your underweight patient gain weight because:

1. *it increases food intake:* B_{12} and B_1 stimulate appetite.
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25 mcg. of vitamin B12 | **10 mg. of vitamin B1**

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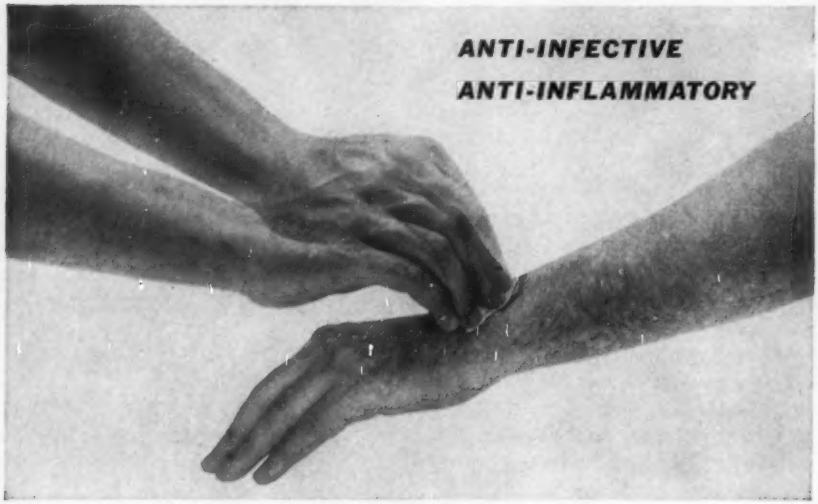
★T.M. Reg. U.S. Pat. Off. | 1. Vitamin B_{12} Research, editorial, J.A.M.A. *153:960* (Nov. 7) 1953

DUAL ACTION in dermatologic therapy



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Parasitology

Antibiotic for Amebiasis

Fumagillin appears to be a safe, effective agent in the treatment of intestinal amebiasis. Administration of the amebicidal agent in doses of 10 mg. three times daily for fourteen days resulted in the eradication of the parasites in 28 of 30 patients, report Dr. Roger L. Black and associates of the U. S. Public Health Service Hospital, Baltimore. Of 16 patients observed for six weeks or longer after treatment, only 2 showed recurrence of infection. The drug was not effective in the treatment of an amebic liver abscess or in therapy for ameboma of the rectum.

Gastroenterology 27:87-92, 1954.

Radiology

Prevention of Vomiting

Chlorpromazine prevents vomiting and nausea after heavy exposure to roentgen rays. Subcutaneous injections of the drug in doses of 10 mg. per kilogram of body weight were given to dogs about half an hour before irradiation with 800 r. Drs. Herman I. Chinn and George L. Sheldon of Randolph Field, Tex., report that no emesis occurred in 8 of 10 animals; vomiting was delayed in the remaining 2. Only fresh preparations of the drug were effective. Cysteinamine afforded little protection, but both agents prolonged survival time.

Proc. Soc. Exper. Biol. & Med. 86:293-295, 1954.

Urology

Therapy of Proteus Infection

Furadantin, given to rats with *Proteus* infection of the urinary tract, diminishes or even abolishes bacteria found in the urine and decreases stone formation. With dietary supplements of the nitrofurantoin compound, about 67% of the infected rats survive, as compared to 16% of the untreated animals, report Drs. C. W. Verineulen and R. Goetz of the University of Illinois, Chicago. Pretreatment with Furadantin prevents *Proteus* infections in most rats, but the infection is eliminated in only half when therapy is instituted three days after *Proteus* introduction. The urea-splitting power of *Proteus*, favoring urolithiasis, is also decreased even when zinc disks have been placed within the bladder. The drug inhibits renal parenchymal infection in almost all animals.

J. Urol. 72:99-104, 1954.

Ophthalmology

Therapy for Corneal Damage

Fibrin film therapy may relieve pain and promote healing of corneal lesions. The damaged corneal area is covered by a fibrin clot formed by the instillation of a drop of thrombin and normal human plasma onto the cornea, reports Dr. C. W. Weisser of Pittsburgh. The fibrin film treatment has been used successfully in over 100 patients.

Arch. Ophth. 51:681-686, 1954.

New

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Hemorrhoidal Suppositories

ANTIBIOTIC - ANAESTHETIC

A new and superior formula which reduces incidence of infection, relieves pain and discomforts associated with hemorrhoids and minimizes anal leakage. In addition, Premocones exert a protective action by coating the inflamed hemorrhoids, thus promoting faster healing.

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Hematology

Liver Uptake of B_{12}

The liver is a storage depot for vitamin B_{12}. A radioactive tracer employed by Dr. George B. Jerzy Glass and associates of Flower and Fifth Avenue hospitals, New York City, reveals hepatic uptake to be several times as high as that of other tissues and hepatic decline to be slower than elsewhere in the body. Vitamin levels in the liver rise to peaks four to six days after injection and five to seven days after oral administration. Two or three months later, 85% of peak values are still demonstrable. Hepatic storage probably accounts for the long period after deprivation before a deficit ensues, as well as for delayed onset of macrocytic anemia after total gastrectomy. Elderly persons tend to have low uptake after oral doses of B_{12}, but absorption is improved by preparations containing intrinsic factor from hog stomach.

Virology

Prevention of Serum Hepatitis

Beta-propiolactone is the most promising and least toxic of 400 compounds tested for potency against the virus of serum hepatitis. Using plasma containing beta-propiolactone, Dr. Frank W. Hartman of the Henry Ford Hospital, Detroit, and associates report 345 transfusions to 161 patients, after extensive trial on animals.

Anesthesiology

Sparkless Shoe

To prevent anesthetic explosions, all surgical personnel should be grounded by electrically conductive shoes. Specially manufactured footgear is cumbersome and expensive, but any type of shoe can be converted by the method described by Dr. Otto I. Bloom of New York City. Sole and heel are replaced by conductive materials. A full-length conductive sock lining is placed inside the shoe, carried over the counter, and connected with the new sole and heel. All the original comfort of old footwear is retained for long standing through difficult operations.

Hematology

Erythropoietic Plasma Extract

A promising blood-building factor can be extracted from the plasma of anemic blood. Phenylhydrazine is injected into rabbits for a week to reduce red cell count to about 1,000,000. Whole blood is then collected, and plasma is boiled and filtered. Dr. Albert S. Gordon of New York University, New York City, and associates report that healthy rats receiving subcutaneous doses of the extract for eleven days have significant increases in red cell count, hemoglobin concentration, reticulocyte percentage, hematocrit level, and marrow concentration of nucleated erythrocytes. The stimulant may be a circulating hemopoietin, which is now considered to be the humoral mediator of anoxia, the fundamental erythropoietic stimulus.

Proc. Soc. Exper. Biol. & Med. 86:255-258, 1954.

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Inositol ..... 200 mg.

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Hepatology

Fat and Cirrhosis

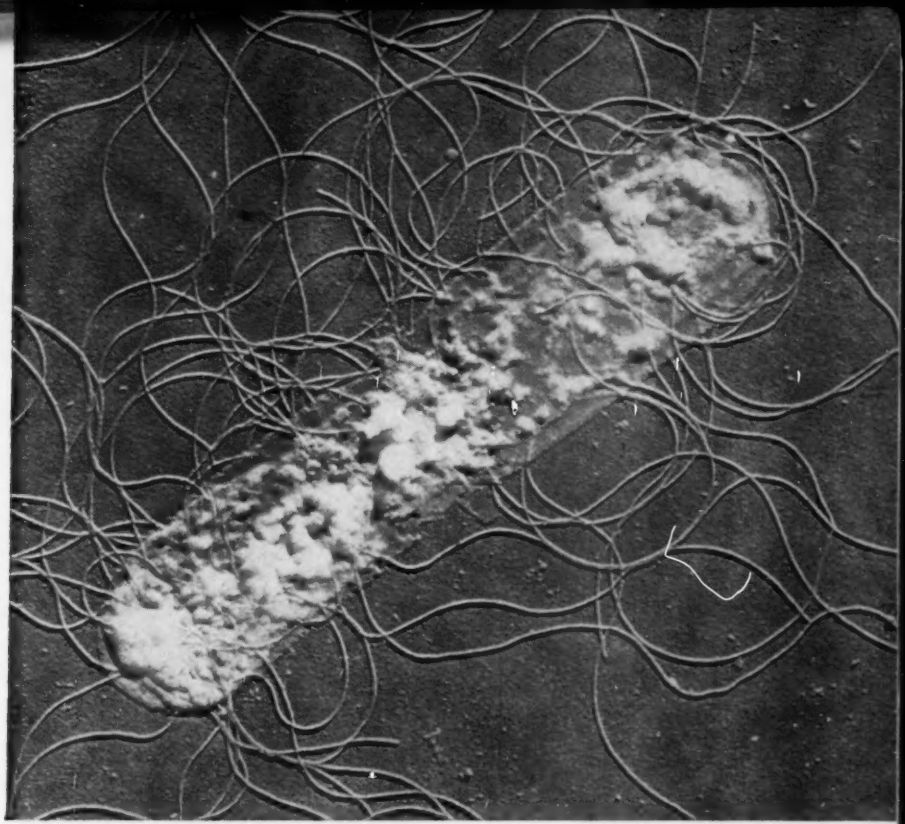
To prevent fatty liver from becoming cirrhotic, hepatic fat should be removed and development of related necrosis avoided. Transitional stages were analyzed post mortem, report Dr. Hans Popper and associates of Northwestern University, Chicago, in more than 40 alcoholics with protein malnutrition and large, fatty noncirrhotic livers who died in short severe attacks of jaundice. Hepatic failure and death resulted from focal necrotic lesions due to minor infection. If jaundice lasted more than one week, regenerating liver cells and formation of collagenous membrane were seen, and further changes were noted in specimens from other autopsies. In some cases, cirrhosis apparently results from collapse of fatty cysts; more often the chief factor is development of postinflammatory membrane and septa or breakage fissures, due to uneven expansion and regeneration after disappearance of fat or after necrosis and growth of septa.

Gynecology

Repair of Fallopian Tubes

Femoral veins and arteries may be substituted for fallopian tubes in dogs. Drs. Arthur M. Davids and Alexander Bellwin of the Mount Sinai Hospital, New York City, find that patency of the transplanted vessels is enhanced by introduction of polyethylene tubing through the abdominal ostium into the uterine cavity. Lumens of the transplanted veins show less narrowing than those of arterial segments.

Fertil. & Steril. 5:325-333, 1954.



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It is another of the more than 30 organisms susceptible to

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100 mg. and 250 mg. capsules

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Oncology

Serum Calcium Changes

Determination of serum calcium and alkaline phosphatase activity is a useful adjunct to roentgenography in the evaluation of the metabolic status of osseous metastases from breast carcinomas. In most hypercalcemic episodes in patients with bone metastases, the changes in serum calcium levels are in inverse ratio to alkaline phosphatase activity, report Dr. Solomon I. Griboff and associates of Montefiore Hospital, New York City. Hypercalcemic crises, reflecting rapid bone lysis, may be preceded by premonitory decreases in the levels of alkaline phosphatase. Activity in the bone lesions usually fluctuates from rapid bone breakdown with hypercalcemia, through intervals of metabolic quiescence, to bone repair indicated by elevated alkaline phosphatase levels.

J. Clin. Endocrinol. 14:378-388, 1954.

Contests

Leukemia Competition

An award of $5,000 has been made available by the Robert Roesler de Villiers Foundation for a preventive measure, cure, or control of leukemia and allied diseases. Papers may be submitted up to October 20, 1955. Details of the contest can be obtained from the office of the Foundation, 1172 Park Avenue, New York City 28.

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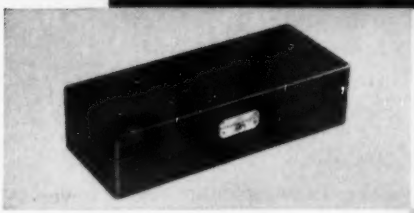

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Cardiology

Hypnosis and Cardiograms

Electrocardiographic alterations, especially in the T wave, may be elicited by hypnotic suggestion. Various T-wave changes were produced by hypnotically induced situations resembling anxiety and fear or overexertion in half of 14 healthy subjects and in 4 of 11 patients with coronary sclerosis and angina pectoris, report Dr. Reuben Berman of the University of Minnesota, Minneapolis, and associates. An S-T depression similar to that produced by slight subendocardial ischemia appeared in 1 healthy individual, and R_3 disappeared temporarily in 1 patient with cardiac damage. Although the deviations were not identical with changes due to actual exercise or organic myocardial damage, the data indicate that emotional states may have an influence on the electrocardiographic determinations.

J. Appl. Physiol. 7:89-92, 1954.

Awards

APMA Presentation

The 1954 Scientific Award of the American Pharmaceutical Manufacturers' Association will be given to Dr. Vincent du Vigneaud, professor of biochemistry at Cornell University. The presentation will be made December 7 at a dinner to be given in the Waldorf-Astoria Hotel, New York City.

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Bite Size . . . Crisp . . .
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Therapeutics

Radiation of Lepromas

Atrophy and regression of lepromatous lesions may be induced by local radiation therapy. Although the general course of leprosy is not altered by ionizing radiation, the treated lesions do not recur, report Dr. Eugene F. Lutterbeck of the Cook County Hospital, Chicago, and associates. Single massive doses of 1,000 to 6,000 r administered to nodules and 1,000 to 3,000 r to plaques and macules caused atrophy, fading, and flattening of all but 2 of 23 lesions. However, none of the 6 patients treated showed a decrease in number or change in morphology of *Mycobacterium leprae*. The general histopathologic architecture of the diseased skin was not altered, probably because the radiation effect did not penetrate subcutaneous tissue.

Radiology 63:1-10, 1954.

Cytology

Sex and Skin Cells

Human skin cells appear to exhibit sex differences in nuclear pattern. In biopsies of females, including pseudohermaphrodites, Drs. Eve Marberger and Warren O. Nelson of the University of Iowa, Iowa City, find chromatin masses close to the nuclear membrane in about 64% of nuclei. These masses appear in about 4% of male nuclei.

Doctor to Doctor

Think of a gag that fits the illustration. For every issue a new gag is published and the author is sent $5. The Dec. 1 winner is

Norman Foley, M.D.
Toledo

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"Too bad the tonsil and duck seasons open the same day."

Dentistry

Cortisone and Teeth

Eruption of teeth in the newborn rat is hastened by cortisone therapy. Injections begun in day-old animals have noticeable effects by the third day of life, observe Dr. E. D. Goldsmith and Leonard Ross of New York University, New York City, and the University of Alabama, Birmingham. By the seventh day, the dental tip is well into the mouth, three days sooner than in untreated animals. At all ages, periodontal connective tissue elements are reduced. Growth of both enamel and pulp is accelerated, but ameloblasts and odontoblasts have typical appearances.

Endocrinology

Effects of Hypophysectomy

The physiologic effects of hypophysectomy in man depend on whether the pituitary is wholly or only partly removed. Dr. Charles D. West and associates of New York City note a sudden decrease of protein-bound iodine in blood and of iodine uptake by the thyroid in all cases, but values return to normal a few weeks after incomplete hypophysectomy. With partial removal, diabetes insipidus occurs, requiring pitressin, but cortisone can be withdrawn safely. Total excision of the gland is sometimes followed by persistent hypothyroidism, which improves with thyroid-stimulating hormone therapy. Complete removal also produces adrenal insufficiency when cortisone is withheld and causes the follicle-stimulating hormone to disappear from the urine.

Endocrinology

Sodium-Retaining Corticoid

Urine of children and adults normally contains very small amounts of an extremely active sodium-retaining factor apparently identical with electrocortin. The substance is isolated from other urinary steroids by paper chromatography and assayed in adrenalectomized rats. Quantities are measurable only if urine is subjected to prolonged acid hydrolysis and large doses of urinary extract are bioassayed. Dr. B. J. Axelrad and associates of Stanford University, San Francisco, note increased urinary output of corticoid when dietary sodium is low and urinary sodium falls. High output in the nephrotic syndrome is reduced by cortisone, hydrocortisone, or ACTH when diuresis is greater; if diuresis fails, output drops little, if at all.

Hematology

Bovine Antihemophilic Agent

Extracts of ox blood plasma may provide a safe and plentiful source of antihemophilic factor for replacement therapy in hemophilia. A preparation of 1 gm. of the bovine antihemophilic globulin is equivalent to approximately 20 pt. of human blood, report Dr. R. G. Macfarlane and associates of Radcliffe Infirmary, Oxford. Intravenous injection of bovine material corrected clotting time and prevented excessive bleeding in 3 hemophilic patients during dental surgery. However, a temporary thrombocytopenia, without purpura, due to platelet agglutination, developed in 1 individual.

Lancet 6826:1316-1319, 1954.

Pharmacology

Gastrointestinal Retardation

Pamine and Banthine appear to be effective in slowing gastrointestinal motility of healthy subjects. Dr. William P. Chapman of Harvard University, Boston, and associates observed reactions by radiographic examination during fasting, with a standard meal taken half an hour after medication, and during fast after three weeks of therapy. Banthine delayed gastric emptying slightly more than Pamine in shorter trials, but results were similar after continuous therapy. Differences between the drugs and a placebo were more pronounced for the bowel than the stomach. Eating lessened intestinal differences between placebo and active agents. Banthine usually produced more oral dryness than Pamine, but neither had a great effect after three weeks.

Endocrinology

Daily Adrenal Variation

The adrenal cortex in healthy people appears to secrete most actively in the morning. Dr. Richard P. Doe and associates of the University of Minnesota, Minneapolis, observe that eosinophil counts are low and levels of 17-hydroxycorticosteroids are high at this time. Hormone falls during the day in plasma and urine and is greatly reduced between midnight and 3 A.M.

Our Office Nurse

Think of a gag that fits the illustration. For every issue a new gag is published and the author is sent $5. The Dec. 1 winner is

Frank W. Summers, M.D.
San Francisco

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for moderately severe to severe hypertension which does not respond adequately to Rauwiloid or other rauwolfia preparations alone. Makes Veriloid effective in better tolerated dosage.

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by kaz

"IT WAS TOO NEAT — NOW I FEEL AT HOME."

"I CALL IT 'MOTHER AND CHILD.'"

"I'LL ALWAYS REMEMBER THIS! HE WAS BORN JUST AS PEEWEE REESE HIT A HOME RUN!"

"WHAT I'M ABOUT TO GIVE YOU MAY HURT A LITTLE."

"I SMELL GAS ESCAPING."

"CERTAINLY I LIKE COD LIVER OIL — IT SLICKS DOWN MY HAIR."

January 30, 1952 —
typical adolescent acne

KUTAPRESSIN®

(Vasoconstricting Principle from Liver)

EXTENDS THE "THERAPEUTIC POTENTIAL" IN ACNE[1]

Cumulative experience with **KUTAPRESSIN** has confirmed the remarkable value of this new agent in acne.[1-6] Recently, significant improvement was obtained in 63 percent of 52 patients who had ceased to improve on other methods of treatment, including x-ray.[1] Definite improvement in 1 to 2 months plus the relative painlessness of the treatment ensured patient-cooperation. **KUTAPRESSIN** has also proved effective against rosacea, pruritus ani, hypertrophic scars, and keloids.[5-7]

Unique action—varied applications...

KUTAPRESSIN is a highly selective vasoconstricting principle acting on abnormally dilated terminal arterioles and capillaries without raising systemic blood pressure. Free from side-effects, it has been used with encouraging results in such diverse applications as herpes zoster, drug dermatoses, eczemas, third-degree burns and graft preparations, and in reducing postoperative bleeding following tonsillectomies, adenoidectomies, etc. There are no known contraindications.

DOSAGE: Average, 2 cc. intramuscularly or subcutaneously, daily or thrice weekly until improvement is obtained. In severe cases, 5 cc. may be administered initially, and subsequently reduced.

SUPPLIED: As aqueous solution in 10- and 20-cc. multiple-dose vials.

1. Pensky, N., and Goldberg, N.: New York State J. Med. 53:2238, 1953. 2. Nierman, M. M.: J. Indiana M. A. 45:497, 1952. 3. Knox, J. M.: Preliminary Report, U. S. Navy Medical News Letter, vol. 20, Nov. 14, 1952. 4. Lubowe, I. L.: Clin. Med. 59:354, 1952. 5. Poole, W. L.: To be published. 6. Kalb, C.: To be published. 7. Marshall, W.: M. Times 79:222, 1951.

*Case report.

Two months later: "the skin was dry . . ., the whole face markedly improved"*

Professional Literature Available

Ethical Pharmaceuticals Since 1894

KREMERS-URBAN COMPANY

Laboratories in Milwaukee

Patients . . . I have met

● *The editors will pay $1 for each story published. No contributions will be returned. Send your experiences to the Patients I Have Met Editor, MODERN MEDICINE, 84 South Tenth St., Minneapolis 3, Minn.*

Calculated Risk

"How are you this morning?" I asked a patient I met on the street.

"What does it cost to tell you?" he replied.—W.J.B.

Logician

"That pain in your leg may be due to old age," I told my patient.

"Don't be silly!" he barked. "The other leg is the same age and it's all right."—J.N.

Juggling the Numbers

My colleague quipped, "Octogenarians should be a good bet for insurance companies. Our statistics show that few men die after 80 years of age."—S.L.

"Come, come, you can't all be doctors."


Koroseal Tubing


Koroseal Sheeting

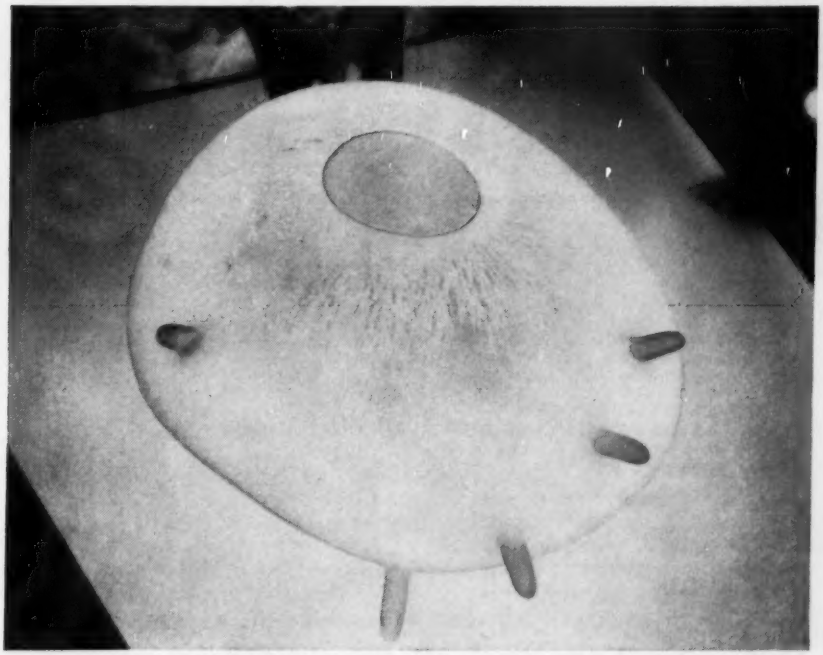

Throat Collars

B.F.Goodrich


Ice Caps


Syringes


Hot Water Bottles



"32-quart size" rubber gloves

SCIENTIFIC, laboratory tests of repeated sterilization as well as this dramatic water test show B. F. Goodrich surgeons' gloves have strength and stretch that makes them outlast ordinary gloves. Yet they are tissue-thin, comfortable.

B. F. Goodrich gloves have tapered fingers for better fit, full backs shaped like your hand, long narrow wrists to fit snugly over gown or white jacket—won't roll down. They're tissue-thin even at the finger tips.

Made in white or brown, smooth or "cutinized". Sizes 6 to 10.

"Special purpose" gloves for doctors who are allergic to ordinary rubber gloves are just as thin as all other B. F. Goodrich gloves. Cuff has a red roll for easy identification. Sizes 6½ to 9½.

Examination gloves with short wrists are made in sizes 7 to 9.

Sizes are marked in color to save time in sorting. Colors won't fade or wear off.

Order from your surgical or hospital supply dealer or write to: *The B. F. Goodrich Company, Sundries Sales Department, Akron, Ohio.*

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Surgeons' Gloves

BY

B.F. Goodrich

INDUSTRIAL PRODUCTS DIVISION

newest

broad-spectrum antibiotic

Tetracyn®

Brand of tetracycline

For well-tolerated therapy of such common infections as:

Pneumococcal infections, including pneumonia, with or without bacteremia; streptococcal infections, with or without bacteremia, including follicular tonsillitis, septic sore throat, scarlet fever, pharyngitis, cellulitis, urinary tract infections due to susceptible organisms, and meningitis; many staphylococcal infections, with or without bacteremia, including furunculosis, septicemia, abscesses, impetigo, acute otitis media, ophthalmic infections, susceptible urinary tract infections, bronchopulmonary infections, acute bronchitis, pharyngitis, laryngotracheitis, tracheobronchitis, sinusitis, tonsillitis, otitis media, and osteomyelitis; certain mixed bacterial infections; soft tissue infections due to susceptible organisms.

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world's largest producer of antibiotics, discoverers of oxytetracycline and the first to describe the structure of tetracycline, nucleus of modern broad-spectrum antibiotic therapy.

Tetracyn is supplied as Capsules, Tablets, Oral Suspension (chocolate flavored), Pediatric Drops (banana flavored), Intravenous, Intramuscular, Ophthalmic Ointment, and Ointment (topical).

®TRADEMARK

Pfizer

PFIZER LABORATORIES, Brooklyn 6, N. Y.
Division, Chas. Pfizer & Co., Inc.

British Banter

A patient claimed that sleeping pills did not cure his insomnia and asked for twilight sleep. When I explained that twilight sleep was for labor, he complained, "Isn't there anything for us Tories?"—S.L.

Equality

On my vacation I passed through a Mexican village that did not enforce sanitation measures. "Is the death rate high around here?" I asked a shop-owner in faltering Spanish.

"It's the same as in your country," he answered, "one to a person."—L.T.

"Yes, sir! Cut my fuel bills by 40% plus!"

No Miracle

"Doc, will I be able to play the piano after my wrist heals?" the patient asked.

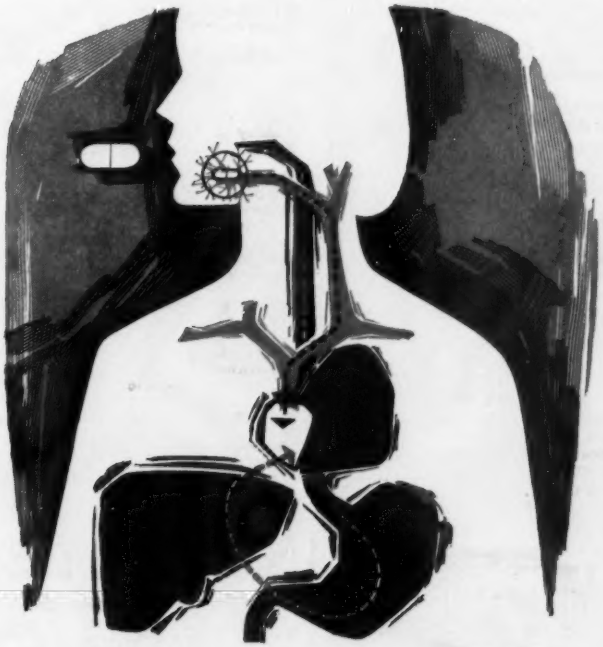
"Not unless you could play it before it was broken," I answered.—H.H.

When a surgical patient asked if he would know everyone when he came out of the ether, I replied, "That's expecting an awful lot from the anesthetic."—W.L.H.

INDEX TO ADVERTISERS

The shortest route in oral androgen therapy—

by-passing the liver



With Metandren Linguets the transmucosal absorption of methyltestosterone permits direct passage into the bloodstream — bypassing the inactivating action of the liver and destruction by the gastric contents. *The response to Metandren Linguets approximates that of injected androgen.*

Metandren Linguets for buccal or sublingual administration provide methyltestosterone about twice as potent per milligram as unesterified testosterone.[1]

Metandren Linguets also provide — economy for the patient • convenience for doctor and patient • freedom from fear of injection • easily adjusted, uniform dosages.

Metandren Linguets are supplied in tablets of 5 mg. (white, scored) and 10 mg. (yellow, scored); bottles of 30, 100 and 500.

METANDREN® LINGUETS®

1. ESCAMILLA, R. F., AND GORDON, G. S.: J. CLIN. ENDOCRINOL. 10:248 (FEB.) 1950.

METANDREN® (METHYLTESTOSTERONE U.S.P. CIBA)
LINGUETS® (TABLETS FOR MUCOSAL ABSORPTION CIBA)

CIBA
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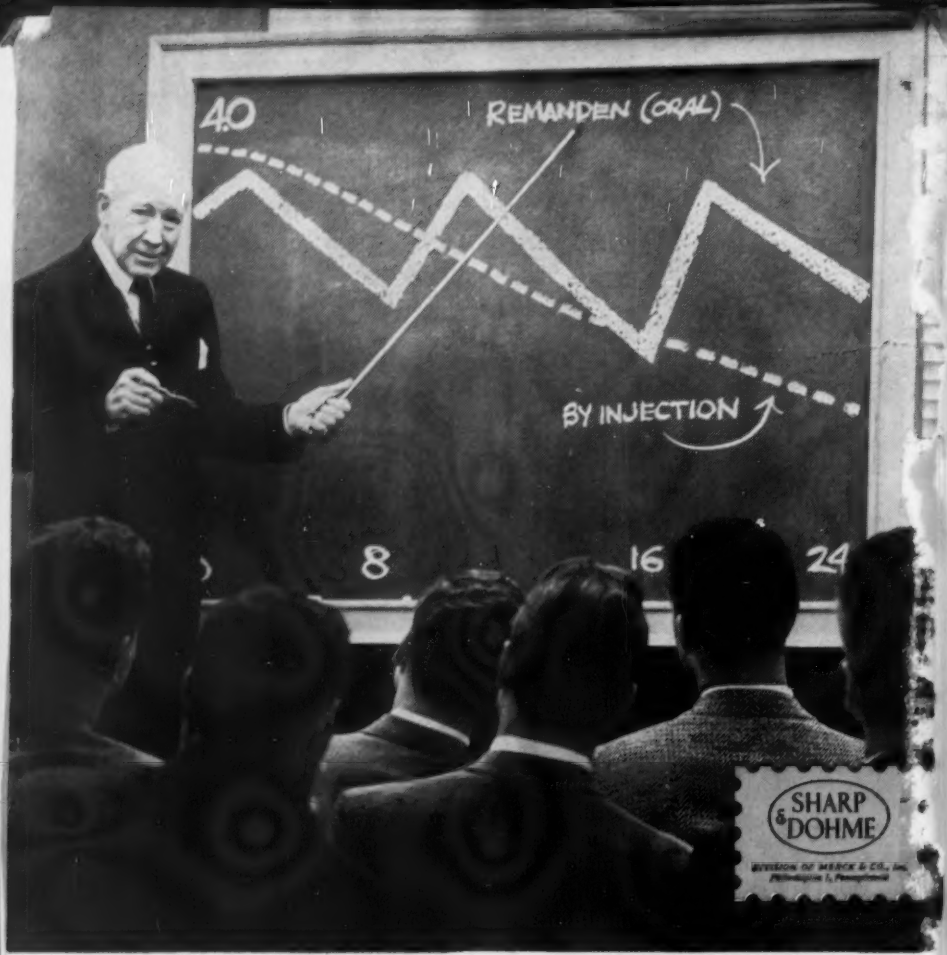

PHOTOGRAPH BY CHARLES KERLEE

Note the sustained penicillin levels with oral

REMANDEN®

PENICILLIN WITH PROBENECID

REMANDEN produces the same high sustained plasma levels as intramuscular penicillin.[1] Because of the Benemid® (probenecid) content penicillin wastage is minimized.

REMANDEN provides adequate oral penicillin therapy and also enhances the therapeutic effect of intramuscular procaine penicillin in the treatment of fulminating infections.

Quick Information: REMANDEN-100 and REMANDEN-250 supply 0.25 *Gm.* 'Benemid' per tablet and 100,000 or 250,000 units of crystalline penicillin G. *Dosage: Adults:* 4 REMANDEN tablets initially, then 2 every 6 or 8 hours. *Children:* on basis of body weight. (Initial dose—25 mg. 'Benemid' per Kg.; daily dose—40 mg. per Kg. in divided doses every six hours.)

Reference: 1. Special Exhibit, Mod. Med. 22:94 (Jan. 1) 1954

AS WE APPROACH the close of another year, and look forward to the joys of the holiday season, our thoughts turn instinctively to the countless friendships we have been privileged to make and hold throughout the years. So, to you, Doctor, and yours we express our gratitude and extend our heartiest good wishes for a

Merry Christmas

and

Happy New Year

MEDICAL ARTS SUPPLY COMPANY
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—AND—

MEDICAL ARTS PHARMACY
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Wounds dressed

by pressing a button

Sprayed directly onto the lesion from a self-contained aerosol "bomb", AEROPLAST replaces conventional gauze and tape dressings in all routine surgical uses.

AEROPLAST forms a transparent protective dressing over any body surface, regardless of contour, yet does not restrict circulation, respiration, or movement. Transparency, a unique advantage, permits critical evaluation of healing progress at a glance without disturbing or removing the dressing.

Aeroplast dressings are impermeable to bacteria. Aseptic lesions remain sterile as long as the dressings are allowed to remain intact. Vital fluids and electrolytes are sealed in.

Aeroplast dressings are strong and flexible; they withstand washing, friction, and the stress of motion. They are non-toxic, non-sensitizing, and non-allergenic. Easy to remove after a sufficient period for complete "setting", Aeroplast dressings are simply peeled off.

Major operative procedures such as laparotomies, thoracotomies, ileostomies, skin graft donor sites, openly reduced fractures, etc., as well as burns, excoriation, abrasions, and lacerations, are typical of the broad variety of cases in which Aeroplast has been used to advantage as the sole dressing agent.

Suggested price to physician—$4.67 per 6 oz. aerosol-type dispenser.

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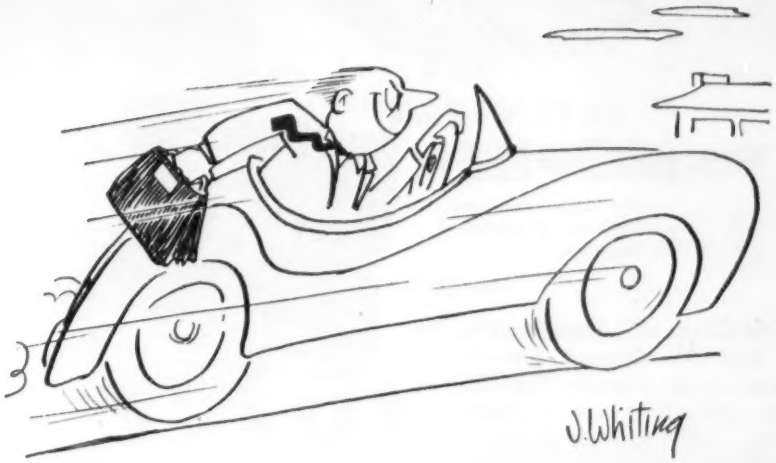

Streamline Sterling, M. D.

Screeching tires announce his arrival. Must have been a half-miler the way he moves on hospital rounds . . . or house calls. Drives one of those low, speedy foreign jobs. Is a genuine get-things-done man.

But, Streamline likes speed where it counts, too. (And probably so do you.) Tired of waiting "all day long" for his boiler to get up to heat, Streamline got himself a fast Castle "777" Speed-Clave.

It reaches sterilizing temperatures in 4-8 minutes! Then nabs spore-bearers that boiling won't touch, keeps patients safe from cross-infection.

For the busy man who needs to save time (and who doesn't?) the "777" Speed-Clave is available for as little as $208 to $211 complete. Phone us, and we'll bring over a model for demonstration, or free trial.

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A TRULY OUTSTANDING INSTRUMENT!

THE Cardi-all, direct writing electrocardiograph, provides records of highest fidelity through the full frequency Galvomotor galvanometer. The physician is assured of clinically precise cardiograms.

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THE CARDI-ALL, complete with all accessories is . . . **$545**

The Cardi-all, measuring 8½ x 11 x 14¾ inches weighs only 27 pounds completely loaded and all accessories are carried *within* the instrument.

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New

For ESSENTIAL HYPERTENSION

an alliance of the classic and contemporary . . .

THEOMINAL R.S.

(Theominal with Rauwolfia serpentina)

Combines for synergistic action:

Theobromine	*(5 grains) 0.32 Gm.*
Luminal® (pioneer brand of phenobarbital)	*(1/6 grain) 10 mg.*
Rauwolfia serpentina alkaloids (alseroxylon fraction)	***1.5 mg.***

Theominal itself has been widely prescribed for essential hypertension for several decades. The addition of Rauwolfia serpentina alkaloids—purified alseroxylon fraction—to the well established Theominal formula represents a substantial improvement.

With the use of Theominal R.S., objective and subjective improvement can be obtained in a large percentage of hypertensive patients. There is mild and gradual but sustained reduction of excessive blood pressure and pulse rate to near normal levels. Striking symptomatic improvement occurs concurrently: alleviation of congestive headache, vertigo, dyspnea, nervous irritability, apprehension and insomnia.

With Theominal R.S. medication the antihypertensive action of Luminal and theobromine may be evident in a few days, whereas a week or more may elapse before the Rauwolfia component exhibits its maximum effectiveness. However, the sense of well being due to Rauwolfia is experienced within a few days of medication and usually precedes the development of the maximum antihypertensive effect. Theominal R.S. is well tolerated.

DOSAGE: The usual dose of Theominal R.S. is 1 tablet two or three times daily. When improvement has been maintained for a time, the dose may be reduced or medication suspended occasionally until its resumption is indicated.

HOW SUPPLIED: Theominal R.S. is supplied in bottles of 100 tablets.

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